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U. S. DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
WILLIAM T. HARRIS, COMMISSIONER.

ART AND INDUSTRY.

EDUCATION
IN THE
INDUSTRIAL AND FINE ARTS
IN
THE UNITED STATES.

BY

ISAAC EDWARDS CLARKE, A. M.

PART II.—INDUSTRIAL AND MANUAL TRAINING IN PUBLIC SCHOOLS.

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INTRODUCTION.

MISCELLANEOUS MATERIALS AND PLAN OF PRESENT VOLUME.

Recent Rapid Development of the movement for Industrial Training in Schools—Arrangement of Report and contents of present Volume, modified by reason of this activity—Summary of Part I—Reception accorded to the first volume of this Report—Reviewed in home and foreign press—Interest shown in the accounts of the new movement in Education—Letters concerning the Report received by the Bureau from many home and foreign correspondents—Letters inserted from Hon. George Bancroft, John G. Whittier, Henry Barnard, Ex-U. S. Commissioner of Education, and John Sparkes, Head Master, Kensington Art Schools, London, England—Intimate relation between the American Press and the Common Schools—Resolutions approving this Report passed by the Art Department of the National Educational Association, 1886 and 1887—The several editions of Part I of this Report—(In Memoriam—John Dudley Philbrick, LL. D.—Charles Callahan Perkins, Esq.—Professor Walter Smith.)—Kindergartens in San Francisco, and other cities—An Ideal Orphans' Home in Baltimore—Some advantages possessed by private schools and institutions in testing educational methods—Public school educators may profit by results of such experiments—"Home study in Drawing and Instruction by Correspondence" for teachers in public schools—Need of strictly defining the nomenclature of the new education—The report made by the Committee on Pedagogy to the National Association at the Annual Meeting held in Nashville, Tennessee, 1870, given in Appendix "L" of this volume—Extracts from pamphlet criticising this report of the Committee—This introductory chapter is thus used in part as a supplementary "Appendix" to this volume—Extracts from Superintendent Seaver's report, Boston, 1889—Extracts from Superintendent MacAlister's report, Philadelphia, 1889—Industrial training in the schools of Washington, D. C., in 1890—Annual meeting of the American Economic Association, December, 1890—The Relation of Industrial Education to Economics—Value of Free Common Schools as set forth by the President of Tulane University, New Orleans, Louisiana—Remarks on the necessity of popular education in a Republic, by Hon. Randall Lee Gibson, U. S. Senator from Louisiana—Tulane University tersely described by Rev. A. D. Mayo—Edward Everett on Common Schools—A Technical School of Pottery to be opened in connection with the "School of Industrial Art," in charge of Mr. L. W. Miller, in Philadelphia—

Other Technical Art Trade Schools in the United States—Annual meeting of the Department of Superintendence held in Philadelphia, February, 1891—Paper by President MacAlister of Drexel Institute—The coming World's Fair to be held in Chicago—How American Schools impress a visiting educator from Australia—"Conference on Manual Training," held in Boston, April, 1891—Arrangement of contents of the present volume—The chapters analyzed—Plea for the restoration of the art idea in elementary education—Silliman, Agassiz, and Newell, the pioneers in introducing Laboratory methods in teaching the Natural Sciences—The Appendices described—The first ten chapters of this Volume deal with the questions referring to the new movement, as discussed by educators—The final ten chapters are mostly given to the contemporary history of the introduction of some forms of industrial training in schools in various places—The Appendices are arranged in logical order, so far as possible—This abundant material, collected from many sources, American and European, will, it is hoped, be found serviceable to American Educators.

The most notable characteristic movement in the development of elementary education in the Public Schools of the United States during the few years that have passed since the first volume of the present Report was printed, is that which seeks to introduce in all schools some form of Manual and Industrial Training.

Owing to the urgency and growth of this movement, the beginning of which is referred to in the opening paragraph of Part I, the present volume of this Report has been largely rewritten; so that only the first chapters of the text of the volume, as originally prepared, are retained, with a single Appendix (Appendix "K").

This volume (Part II), with contents as announced in the Introduction to Part I, most of which will now appear in Part III, was ready for the printer when Part I was published. Owing partly to an insufficient force, fully occupied with the routine duties and regular publications of the Bureau of Education, the entire labor of preparation of original matter, compilation of material, and revision of proofs of this Report, has been undertaken by the author and editor, with the aid of a single copyist, whose conscientious, efficient, and valuable services he would here gratefully acknowledge.*

Those familiar with the first volume of the present special Report, more particularly with the "preliminary papers" prefixed thereto, hardly need to be reminded that in the freedom and fullness with which the topics under discussion are presented and considered by the author, the present work departs very widely from the pattern of the ordinary statistical reports issued under authority of the Government; which deal only with the history and statistics of established institutions, and simply seek to set down statements of facts, uncolored by the opinions of their compilers. These reports of arid statistics, usually found very dry reading by the general public, serve, however, most important uses; and are invaluable to the specialists with whose subject they are occupied, and the legislators for whose information they are compiled.

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*The typographical excellence is to be credited to Capt. Henry T. Brian, Foreman of Public Printing, and to the careful proof-reading and technical skill exhibited by his courteous assistants in the Government Printing Office. It is, perhaps, due to these gentlemen to state, further, that for peculiarities of punctuation and capitalization, old fashioned, or otherwise, the author of this Report is alone responsible.

Many of the volumes technically called "reports," which issue from certain offices of the Government such, for example, as the Geological Survey, the Bureau of Ethnology, the Smithsonian Institution, the Life Saving Service, and the Bureau of Education are, however, very different in purpose and character, and are often, though usually written for specialists, not without interest and value to the general reader. Some of these publications resemble rather the occasional reports made by the Royal Commissioners of Great Britain, appointed to investigate some subject of immediate interest, than the typical reports of statistics, common to all Governments, such as are those referred to above.

The purposes and province of the present work are such that a report of that type would not be possible; since these first two volumes, at all events, are largely given to the consideration of proposed changes in the curriculum of the elementary schools, and deal with subjects, the methods of teaching which are not settled; nor, are the subjects themselves, as yet, fully accepted by all educators, as legitimate objects of study in any or in all grades of the public schools.

It is, then, concerning certain educational theories and experiments that are just at present occupying the attention of educators all over the civilized world, with which these two volumes have to do.

In regard to these proposed changes in educational methods and the collateral questions which have been raised in their discussion by educators during the preparation and progress of this Report, information has been widely sought from every quarter. The controlling purpose of the author being to call attention to the varying phases of the development of this new movement and, especially, to direct attention to the purpose which animates many of the earnest advocates of one feature of this general movement, and which threatens the destruction of that ideal of Industrial Art Education, to promote which was the definite purpose of this Report when its preparation and publication was first ordered by the Senate and subsequently by the Congress of the United States.

With the view of recording all the essential phases of the movement every effort has been made to secure reports of all important discussions, and to collect from every available source all possible information likely to be of use to those wishing to know what the advocates of "The New Education" undertake, and hope, as well as to set down what has been by them already accomplished.

In the present volume whose size precludes the insertion of any preliminary essays, the author is responsible for the several "Introductions," and for the running comments, accompanying the quoted extracts in the body of the book, and in the appendices, which, as in the previous volume, may be readily recognized by the different type used; all original matter by the author of the Report being printed in long primer type, while quoted matter is in brevier.

It may be well further to state that, as the edition for general distribution of the first volume of this Report was not available for the public till early in 1887, although the imprint on it, as on the Senate edition, was 1885, it seems desirable to insert in the present volume all matters germane to it, down to the latest possible moment before it is put in type; and, for this reason, this "Introduction" is also made use of as, in some sort, an additional "Appendix."

A SUMMARY OF THE PLAN AND CONTENTS OF THE FIRST VOLUME OF THIS REPORT.

The plan of the several volumes of this Report, with their Appendices, was given in detail in the Introductory chapter of Part I.

This opening volume comprised four main divisions: First, a series of original essays, filling some 220 pages, and entitled "The Democracy of Art," "Preliminary papers upon the relations of Art to Education, Industry, and National Prosperity," in which topics germane to the Report as a whole were considered. Second, the history of "Drawing in Public Schools," occupying some 384 pages, and giving, in detail, the account of the movement initiated by Dr. Philbrick, Mr. C. C. Perkins, Professor Walter Smith, and their coadjutors in Massachusetts. Third, "Statistical Tables" of Art Schools and Art Museums in the United States, showing the number and condition of those institutions as existing in July, 1882. Fourth, a series of Appendices, "A" to "H," filling 405 pages, and comprising a varied store of historical and contemporaneous information relating to the subject, derived from American and European authorities. The purpose kept in view in the preparation of this work has been to place in the hands of educators remote from access to large libraries the fullest and freshest information concerning the topics under consideration, much of which has not yet found its way into Libraries, being contained in addresses, discussions, and like ephemeral forms. On mooted questions the views of the best authorities on both sides are given, in the hope of furnishing for the student, and the official, the information requisite to the formation of an intelligent judgment. An Index, filling some twenty pages, completes the volume.

FAVORABLE RECEPTION ACCORDED TO THE FIRST VOLUME AT HOME AND ABROAD.

The reception accorded to this volume by American and European Educators, by the Reviewers, and by the American press generally, has been most gratifying. The fact that the London Times, and the London Morning News, both gave in their issues of September 20th, 1886, a leading article to the consideration of this volume, within a week after it reached England, was commented on as remarkable by other English journals. The work was, also, about the same time quoted before a Committee of Parliament. The distinguished French Educator, M. Buisson, gave a careful review of the book in The Revue Pédagogique.* Shiro Akabani, the accomplished secretary of the Japanese Legation then in Washington, translated a portion of it into Japanese for the use of the home government.

CORRESPONDENCE CONCERNING THIS REPORT.

Many letters in relation to it were received from the home and foreign correspondents of the Bureau of Education, showing a very general interest in the experiments recorded, and in the new departure taken by advanced educators in the United States—as shown by the endeavor, begun in Massachusetts, and rapidly extending in other States,—to introduce and develop Industrial Art Training as a component part of all elementary Education.

From these valued evidences of their approval by representative educators the four letters which follow are selected. The first is from the veteran educator Hon. Henry Barnard, ex-United States Commissioner of Education, whose early efforts to introduce the study of drawing into the common schools are recorded in Part I of this Report.*

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*Revue Pédagogique, Paris, March 15th, 1887. See pages 268–272.

HARTFORD, CONN.,
June 8th, 1886.

Dear Mr. CLARKE:

Your valuable book on Art and Industry came duly to hand. I have not been in the reading mood or opportunity since, to master its contents, but I have glanced through the contents and index (my way of taking a survey of the field covered by any great book), and am amazed at the thoroughness with which you have done your work—all of it is of historical value, and the whole Report will constitute the book of reference on this important subject.

Yours truly,
HENRY BARNARD.

This letter from the venerated poet Whittier, contains an affectionate tribute to the memory and worth of Dr. Philbrick:

OAK KNOLL, DANVERS, MASS.,
6th Mo., 18, 1886.

I. EDWARDS CLARKE, Esq.:

DEAR FRIEND: I have been reading thy able and exhaustive Report on Art and Industry, with great interest. Such a work was needed and it has been nobly done. I cannot but admire the evidence which it affords of conscientious thoroughness and complete mastery of the subject in all its details. It cannot fail to do much to hasten the day when Art shall be the hand-maid of American Education and Industry, and a true civilization shall keep pace with material prosperity.

I quite agree with the sentiment quoted in thy title page from my lamented friend and neighbor John D. Philbrick.† It should be seen in letters of gold on every school house in the land.

Heartily thanking thee for sending me thy volume, I am truly thy friend,
JOHN G. WHITTIER.

The following lines, written by the aged and honored historian of America, possess exceptional interest by reason of his criticism of the public buildings in the city of Washington:

WASHINGTON, D. C.,
June 6th, 1886.

Dear Mr. CLARKE:

You could not have given a copy of your volume to any one who would value it more than I do. That Art is an affair of a people, of every great people, is my fixed faith; and I am glad that it has in you an able and eloquent expounder. I have desponded as I ride, or walk through our public squares; and I sigh at the sight of our public buildings, raised at a greater expense than the best buildings elsewhere. The capitol is peculiar and historically interesting; but the rest have respectively cost more money than the best buildings in Spain or in Italy, and yet with what worth! You propose the right remedy.

Gratefully and truly yours
GEO. BANCROFT.

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* See Part I, pages 8–13.

† "No system of education is truly solid and sound and democratic which does not make it possible for the child of superior merit, however poor, to mount to the highest round of the educational ladder."

The letter from Mr. John Sparkes, the distinguished Head Master of the South Kensington Art Schools, is especially prized both by reason of his approval of the statement given in Part I of the aid given by the English government to education in the Industrial and Fine Arts,* and of his endorsement of the credit given to Haydon, as the early advocate for governmental aid to Art Instruction.†

SOUTH KENSINGTON, SCIENCE AND ART DEPARTMENT.
July 28th, 1887.

DEAR SIR: Your splendid and exhaustive book on Art Education has given me much pleasure and much cause for thought. The history of the subject is dealt with by a master and I congratulate you as well as your readers on the accurate and full account that is therein of the progress and origination of our system—but especially I wish to thank you for placing Haydon in his proper position as the far seeing agitator for government art instruction. I will endeavor to send you a recently published syllabus of the present method of grouping the art subjects of elementary schools into standards; rather a formal thesis which has had rather a deterrent effect on the teachers.

I also send you a copy of my book on the history of the Schools of Art, of which I beg your acceptance.

I am, dear sir, with much esteem very sincerely yours,
JOHN SPARKES.

To
COL I. EDWARDS CLARKE.

THE PRESS AND THE PUBLIC SCHOOLS.

These various evidences of appreciation were indeed gratifying; but it is in the fact that the religious, educational, and secular press of the United States, thought proper to publish long, thoughtful, carefully written reviews of this volume, followed in many cases, by editorials relating to the main topics treated in the work, which is of the greatest significance and value; because it shows the wide-spread interest on the part of the press, not only in the special subject of the introduction of a new study in the schools, but also a vital interest in whatever relates to the progress, development and prosperity of the common elementary schools of the country; the schools of the people. Such an interest is as natural as it is general, for the unparalleled circulation of the public newspapers in the United States, as compared with those in any other country, is undoubtedly due to the general dissemination among the people of a knowledge and taste for reading which is to be obtained in the free public schools, wherein every child may be taught to read.

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* See Part I, Appendix "F."

† See Part I, Appendix "A," Paper VI.

By a jealous watchfulness over the welfare of these free elementary schools, the local press will best promote the interests of the people at large, and its own prosperity.

The interest felt in the subject of the introduction of the study of drawing in the schools, which was the topic of this first volume, has been followed by a more general interest in the subsequent development of that initial movement, namely: the introduction of industrial training in all schools, which forms the subject of the present volume; and which, it is hoped, may secure for it as thoughtful consideration as was given to the one which it follows.

RESOLUTIONS IN APPROVAL OF THIS REPORT PASSED BY THE ART DEPARTMENT OF THE NATIONAL EDUCATIONAL ASSOCIATION.

The formal resolutions passed by the Art Department of the National Educational Association, during the annual meetings held at Topeka, Kansas, July, 1886, and at Chicago, Illinois, July, 1887, are here quoted in evidence of the official recognition by American educators of the importance and value of the topics which form the subject matter of this Report.

During the meeting of the Art Department, at Topeka, on July 16th, 1886, Professor Ordway, offered the following resolution:

> *Resolved*, That the extremely valuable report on Art, by Col. I. Edward Clarke, A. M., is worthy of a wide circulation, and that the Art Department of the National Educational Association respectfully requests the U. S. Senate to authorize the publication of extra copies for distribution by the Bureau of Education.

The resolution was carried.*

The edition of extra copies as asked for in the above resolution was subsequently ordered by Congress; and the volumes allotted to the Bureau of Education, were duly distributed under direction of Col. N. H. R. Dawson, then Commissioner of Education.

At the following session of the Art Department, held July 13th, 1887, during the annual meeting of the National Educational Association in Chicago, "Mr. Walter S. Goodnough, of Columbus, Ohio, called the attention of the Art Department to the recent publication of the Report on Art Education, and to the volumes to follow, and offered the following resolution:"

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* The Journal of Proceedings and Addresses of the National Educational Association, session of the year 1886, at Topeka, Kansas. Published by the Association, Salem, Mass.; Observer book and job print, No. 1 City Hall Avenue, 1887; Pp. 605. (See page 429.)

Resolved, 1st. That it is the opinion of the Art Department of the National Educational Association, in session at Chicago, that the Report on "Art and Industry: American Education in Fine and Industrial Art," prepared by Col. I. Edwards Clarke, issued by the Bureau of Education, is a document of the greatest value to all interested in this subject, and is one of the most important public documents ever issued, being an encyclopedia of information on all that had been accomplished up to the date of its issue, and containing valuable papers on the economic, æsthetic, and educational value of the subject.

2d. That it is the unanimous voice of this Department that Volume I, now out, which has already received world-wide attention, should receive the widest possible circulation, and should be in the hands of every public educator in the land.

3d. That the volumes to follow should be given to the public at the earliest possible date.

The resolution was seconded by Mr. W. F. Mason of Philadelphia, and others, and unanimously adopted.*

THE SEVERAL EDITIONS OF PART I.

The reception accorded to this volume by the press of America was, doubtless, the inciting cause which led Congress to order the issue of another edition of this report of 5,000 copies for distribution by Congress and by the Commissioner of Education. The first edition, as it is a "Senate Document," was of the usual limited number of such documents (1,900). The volume reviewed by the press, of which only a small number (250) were issued by the Department of the Interior, was entitled "Industrial and High Art Education in the United States," "Part I, Drawing in the Public Schools," and the book is generally reviewed under that title. As this title proved confusing, since the work was not intended to treat of "Industrial Education," but of "Industrial Art Education," and especially as the Bureau of Education had just a little before published a special report on "Industrial Education in the United States,"† the title of this larger and later edition was changed to avoid further ambiguity to "Art and Industry"—"American Education in Fine and Industrial Art." When it is recorded that the Senate document is entitled "Art and Industry;" "Instruction in Drawing applied to the Industrial and Fine Arts, as given in the Colleges of Agriculture and the Mechanic Arts, and in the Public Schools and other Public

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*The journal of proceedings and addresses of the National Educational Association, session of the year 1887, held at Chicago, Illinois. Published by the association, Salem, Mass.; Observer book and job print, No. 1 City Hall avenue, 1888; Pp. 829. (See pages 554–5.)

†Industrial Education in the United States. A special report, prepared by the U. S. Bureau of Education, Washington, Government Printing Office. 1883. Pp. 319.

Educational Institutions in the United States;" "Part I, Drawing in Public Schools," the bibliography of this one volume, already issued in three editions, may be considered complete, if the fact of an issue of a private edition of some thirty-three extra copies, printed on heavy paper, with the "Industrial and High Art" title, is noted.

THE VOLUMES OF THIS REPORT OF NECESSITY REFLECT CONTEMPORARY MOVEMENTS.

A work relating to a contemporary movement, the preparation and printing of which covers several years—a part being stereotyped each year, so that changes in that portion of the text are impossible—becomes in itself an object lesson, and is a sort of geological record, as it were, of the successive impulses and phases of the movement whose progress it essays to record. The volumes of this Report are, in themselves, striking illustrations of such changing phases; but perhaps no better evidence of the progress in the general appreciation of art by the American public can be found than is indicated by the difference between the wording of the title of the Senate document written in 1880 and the title of the same volume as it appears in the last edition ordered by Congress. In the former, "Drawing" is made the prominent and essential feature of the whole Report, as, in fact it is; being the foundation study of all forms of artistic training, as well as of technical engineering and the mechanic arts in general. The relation of drawing to the Fine Arts seems, however, somewhat subordinated in this first title, for "Art," before the Centennial Exhibition, meant, as commonly understood, only painting, sculpture, and engraving. Architecture was hardly thought of as included; and, probably, to the large majority, art meant simply pictures, and was held to be only a superfluity and a luxury, and, as such, enervating and, on the whole, not desirable.

It would not be easy to exaggerate the immense revolution in the popular comprehension of the meaning and application of art which was the result of the comprehensive display made by the art-producing nations of the world at Philadelphia in 1876. In all the varied applications of art to objects of use or ornament, the Centennial Exhibition was the greatest educational influence that has ever appealed to the American people. It is doubtful if without that influence any general popular interest in the introduction of drawing in the schools could have been aroused.

IN MEMORIAM.

In the progress of any work which extends over a term of years, and in which a number of persons are concerned, the one unchangeable fact of mortality is certain to be forced upon the attention of even the most careless observer. The history of the present work has proved no exception to this rule, rather does it furnish a striking illustration of the universality of the law from which no mortal finds exemption. During the preparation of the first volume, their friends were called to mourn the untimely death, as it seemed in each case, of Mr. Charles B. Stetson, Mr. George Ward Nichols, and Mr. Charles Wyllys Elliott, names well known in the literature of art and education; each of whom had taken an active interest in the progress of this Report and had contributed, more or less, to its contents.

The volume as completed might be fitly termed a memorial of the public services to education rendered by the three distinguished men, the history of whose pioneer efforts for the introduction of Industrial Art Drawing in the public schools is therein recorded at such length; and *their* approval of the work as finally published, was eagerly hoped for by the author.

While the printed sheets were awaiting binding, the author—himself then utterly prostrated by long-continued overwork and hopeless of recovery—was shocked and distressed by the news of the decease on February 2nd, 1886, of the one man, to whose prescience, enthusiasm, and energy, the initiation of the whole movement for industrial art education in America was due ! *

JOHN DUDLEY PHILBRICK, LL. D.

Few names connected with the development of free public schools in America shine with greater effulgence than that of John Dudley Philbrick, LL.D., sometime superintendent of the city schools of Boston, Massachusetts. A man possessed of rare sagacity, joining to quick perception of coming needs conservative habits; of courteous polished manners and graceful diction, he was a master of debate; using a keen rapier rather than a blunt bludgeon of speech, and charming his adversaries as well as his audience, he often prevailed; where a less accomplished debater would have failed.

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*See Part I, p. 231.

Next to the reports by Horace Mann, the forty-five printed reports by Dr. Philbrick, while superintendent of the schools of Boston, stand pre-eminent in the official educational literature of Massachusetts.

Dr. Philbrick, was appointed a special agent of the State to organize and exhibit the admirable educational and science display made by the State of Massachusetts at the Centennial Exhibition at Philadelphia, in 1876. Representing American education at the Expositions of Vienna, and Paris, having been a Special Commissioner of Massachusetts, United States Honorary Commissioner and member of the International Jury at Vienna, in 1873; Director of the United States Exhibition of Education, and a member of the International Jury at Paris in 1878, Dr. Philbrick, already well known to them by his reports, and by the reputation of the schools of Boston under his superintendence, became personally known to the leading educators of Europe; who appreciated and honored him no less than did his own countrymen.

The admirable showing made by the American Educational Exhibit in Paris, was largely, if not wholly, due to the careful preparation of material made here in an incredibly short time under his direction and guidance, reenforced by the hearty co-operation of United States Commissioner of Education John Eaton, who gave to him the facilities of this Office, and aided him in all possible ways. The arrangements in Paris, and the excellent catalogue, which aided so greatly to its appreciation by the public, were wholly due to Dr. Philbrick.

Ever willing to welcome any new thing which offered improvement in the methods of the schools, ready to sacrifice his own time, money, and strength, in the endeavor to promote the introduction of such methods—all of which is illustrated by the history of his early efforts to win a place for drawing in the curriculum of the common schools—he was always so far from letting enthusiasm overpower discretion, he was so capable of patience, so willing to bide his time, that men came to have confidence in his judgment; and he was able, in the end, to draw to his support the strongest and best men in the community.

When he had thus secured the co-operation of Charles C. Perkins, Esq., and of the Rev. A. A. Miner, D. D., his long desired plan for the introduction of the study of Industrial Art Drawing in the public schools of Boston, and Massachusetts, became, at last, possible of accomplishment. How this was effected has been told at length in the previous volume of this Report. The personal character of the man, his integrity, and conscientious devotion to duty, combined with his unaffected kindness of heart, and the interest he took in those associated with him, whether as pupils, teachers, or co-workers, won the confidence and affection of all. In the defence of the rightful claim of every child in America to a free education, he stood ever ready, like Great Heart in Bunyan's Allegory; and proved himself a lineal and worthy successor of Horace Mann.

In this connection, these words by Mr. Whittier, in a letter received as these pages are in the printer's hands, are pertinent: "I have no doubt thou hast done justice to the memory of our noble friend, Dr. Philbrick. He deserves the gratitude of all who feel that education is the vital necessity of our country North and South."

HONORS AWARDED TO DR. PHILBRICK IN EUROPE.

The esteem in which Dr. Philbrick was held in Europe, was partially shown by the honors awarded to him personally at the close of the Paris Exposition, in 1878. He received the cross of the Legion of Honor, and the gold palm of the Université de France. The ancient University of St. Andrews, Scotland, honored itself by conferring upon this leading American educator the Doctorate of Laws.

The success of the exhibition of American education made at Paris under his direction, was shown by the fact that one hundred and twenty-one high awards were given to it; a number in excess of the like awards made to any other country except France.

THE STORY OF HIS LIFE.

The story as told by Mr. Tucker,* of the early life of this New Hampshire boy struggling persistently to get a thorough education, is full of interest; as the story of the typical New England boy of a half century ago. A like insight into the early home life of Horace Mann, is to be found in a letter from himself, quoted on page 72 of this volume. The love of learning, that eager desire for knowledge which formerly characterized the New England youth, is emphatically shown in each of these characteristic instances.

Really entering upon his life work on graduating from Dartmouth

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* See Memorial Volume, pages 3–27.

College in 1842, although, for some years, he cherished the intention of entering the legal profession; Mr. Philbrick, as a successful teacher in Boston schools, as principal of the State Normal School of Connecticut, and as State Superintendent of that State, had shown his great qualities as an educator. Called again to Boston, in 1857, to assume the superintendency of the public schools of that city, he, for eighteen years, organized, directed, and built up the schools, until their superiority was admitted by the whole world. Resigning the superintendency at the end of that time, he was, after a short period of needed rest, again chosen to this position March 1st, 1875, holding it until March 1st, 1878, when his official career was closed.

For ten years he was an active member of the State Board of Education. He was prominent in the counsels of those who, in 1862, organized the Massachusetts Institute of Technology; and was till his death a member of its Corporation and of the Committee on Education. He was a trustee of Bates College, for ten years. A member of the various State Educational Associations of Connecticut, and Massachusetts, as well as of the National Educational Association, Dr. Philbrick was, in turn, chosen President of each. He received the degree of LL.D. from Bates College, in 1872, and of D. C. L. from St. Andrews University, Scotland, in 1879. Born at Deerfield, New Hampshire, May 27th, 1818, he died at his residence in Danvers, Massachusetts, on February 2nd, 1886.

PUBLIC TRIBUTES IN MEMORY OF THIS LOVED AND DISTINGUISHED EDUCATOR.

As a token of respect to his memory the public schools of Boston were closed on the day of his funeral, February 4th. His funeral was largely attended by educators from Boston, and from all over the State.

On the 18th of February, 1886, the regular issue of "the Journal of Education, Boston and Chicago," was almost wholly given up, as a "Memorial Number," to tributes to the life and works of John Dudley Philbrick; consisting of letters from some thirty of the leading educators of the United States, giving their estimate of the man and his works. Among these witnesses were some who had been fellow students at Dartmouth, many who had been associated with him as pupils, or teachers, and others who had known him as fellow superintendents. While each, it may be, dwelt on some different phase of the work of the educator, all agreed in their estimate of the ready sympathy and genuine kindness of the man. General John Eaton, LL. D., President of Marietta College, Ohio, and ex-United States Commissioner of Education, bore testimony to the appreciation in which he was held by foreign educators; John G. Whittier, his friend and neighbor, to his earnestness in the faith that in the education of all citizens lies the only hope of preserving the liberties of the people; Dr. Dickinson, Secretary of the Massachusetts State Board of Education, recited in detail his great work in Boston; Dr. William T. Harris, dwelt upon the tenderness of his friendship and declared that his reports were "luminous with insight into the relations of practical methods to the history of pedagogy;" Rev. Dr. A. A. Miner, and Mr. John S. Clark, bore testimony to his distinguished services in the introduction of industrial art drawing and in the founding of the State Normal Art School; Mr. William E. Sheldon, gave a full page to extracts from his educational writings, and to a list of his published works. He pronounces the Report on City School Systems in the United States, issued by the United States Bureau of Education,* as the work which will probably be considered his masterpiece.

The issue of this number of the "Journal of Education" as the memorial of a single individual, was an unusual tribute to the general interest this man had aroused. This American tribute was followed, a month later, by an appreciative article on Dr. Philbrick, in *The Revue Pédagogique* of Paris, written by M. Buisson, the distinguished French educator.†

A public memorial service, arranged long in advance, was held, under direction of the Boston Masters' Association, on November 5th, 1886, in the great hall of the Public Latin School Building, Warren avenue, Boston, Superintendent E. P. Seaver, presiding. Mr. Gilman H. Tucker, of New York, spoke of the "Early life and Education" of John Dudley Philbrick; Larkin Dunton, LL. D., of Boston, followed with an address on his "Life and Character;" and Professor Wm. T. Harris, gave a discourse on his "Public Services." The Japanese Minister, R. Kuki, sent a letter regretting his enforced absence; and paid a high tribute to the ability and kindness of Mr. Philbrick, with whom he had been associated on the International Jury at the Paris Exposition. Later, a memorial volume was published* containing these addresses; as well as many of the letters given in the Journal, and the important paper, read by Dr. Philbrick, before the American Institute of Instruction in 1884, entitled "The Reform of the Tenure of Office of Teachers."

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* Circulars of Information of the Bureau of Education, No. 1, 1885, City School Systems in the United States. By John D. Philbrick, LL.D. Washington: Government Printing Office, 1885, Pp. 207.

† Revue Pédagogique, March 15, 1886. See page 245 *et seq.*

This brief summary of the magnitude and variety of the educational work accomplished by Dr. Philbrick, during his active life as an educator, suffices to show that, important as his services were in introducing industrial art drawing into the public schools of America, and in thus initiating the remarkable movements partially described in these two volumes, they formed but a small part of the contributions made by him to the development and success of free public school education. It was his broad experience as a practical educator, combined with his full knowledge of the history and philosophy of education, which gave such weight to his words in favor of this study of industrial art drawing.

CHARLES CALLAHAN PERKINS.

Two of the earliest copies of the first volume of this Report were forwarded as soon as received from the binder, one to Walter Smith, then at the head of the art department of the newly founded Technical College, in Bradford, England, and one to Charles C. Perkins, Esq., of Boston, Massachusetts; the two men who, in conjunction with Dr. Philbrick, had accomplished the great work recorded in that volume. From Mr. Perkins, duly came a letter of acknowledgment which, in view of the soon coming tragic close of his life, is here inserted in the belief that its modest, sincere, and kindly words will give a truer impression of the charming character of this distinguished man, than could any words of eulogy. When it is remembered that this man, who speaks so modestly of his own works, was at that very time, perhaps the only American writer on art topics who was recognized as an art authority in European art circles, this quality of his note will be appreciated. He says:

NEWPORT, *July 2nd*, 1886.

DEAR COLONEL CLARKE: Owing to the irregularity of my movements lately, I did not receive your most valuable gift until day before yesterday. As yet I have only had time to dip into the pages of the handsome volume—No. 6 of the limited edition—a fact which gives additional value to the copy, inasmuch as it implies special consideration on the part of the giver. This also you have shown in quoting so much from reports and lectures of mine—thereby leading me to believe that some of my work in the past has not in your opinion been valueless.

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*A Memorial of the Life and Services of John D. Philbrick. Edited by Larkin Dunton LL. D., Head Master of the Boston Normal School, Boston; New England Publishing Company, 1888. Pp. 225.

I assure you that I am not a little proud and pleased of such practical proof of your good opinion.

The book seems to be an exhaustive treatise of a subject deeply interesting to all who wish their country well,—and, indeed, to people in every part of the world who have the cause of education at heart.

You are indeed to be congratulated on the termination of a task of such magnitude and importance.

Most truly and gratefully yours,

CHARLES C. PERKINS.

A few short weeks after the above words were penned, the writer, while on a visit to Hon. Wm. M. Evarts, in Windsor, Vermont, was suddenly killed in a run-away accident while riding in a carriage with his host, who was also seriously injured. By this distressing event was removed from among men one who had proved himself an ideal citizen. Possessed of ample fortune, he had not hesitated to devote his time and his efforts in every good work, to the service of the Community in which he lived. He gave not only of his money, his influence, his example, but that rarer gift, without which all the others are comparatively worthless, he gave *himself.*

For thirteen years Mr. Perkins, was an active member of the school committee of Boston, annually elected thereto by a large majority of his fellow citizens, and was, practically, the permanent chairman of the standing committee on drawing and music. It was owing to this fact that he was able to accomplish so much towards the successful introduction of drawing in the schools. He had already effected the introduction of the study of music in the Boston public schools. It is by reason of his efforts in thus initiating this new departure in public school education, that his name is imperishably inwrought in the history of the movement known as "the New Education."

In the case of Dr. Philbrick, we have seen the typical New England country boy intent on gaining an education in spite of every obstacle. In the instance of Mr. Perkins, we have an example of a different and more unusual experience. We have here one who, with every advantage of fortune and training, has availed himself of them all; and then has freely given to the community the benefit of his culture, and made himself an active civilizing force.

LIFE WORK AND PUBLIC SERVICES.

Charles Callahan Perkins, was born in Boston, Massachusetts, on March 1st, 1823. He graduated at Harvard College in 1843, and went at once to Europe, where he busied himself in the study both of music, and painting; studying the latter in the studio of Ary Scheffer in Paris. At intervals he resided in Europe for some years, once for twelve years continuously, from 1857 to 1869, passing much time in Italy in the serious study of art. In 1864, some of the results of this study were given to the world in two handsome volumes on the "Tuscan Sculptors," a work which at once gave him high rank among the leading art writers. While in Europe, he learned etching, and the illustrations in "Tuscan Sculptors" as well as in his later important work, published in 1867, on the "Italian Sculptors," were etched by himself; a number of them from his own drawings. In 1867, he was made a Chevalier of the Legion of Honor, and in 1868, a corresponding member of the French Institute. He was made a member of the American Academy of Arts and Sciences, in 1874, and of the New England Historical Society, in 1876. He was an enthusiastic lover and student of music; a projector of the Boston Music Hall, to which he gave the colossal statue in bronze of Beethoven. He was president of the Handel and Hayden Society, for eleven years; president of the Boston Art Club, for ten years; a founder and the "honorary director" of the Musuem of Fine Arts, Boston. The office of sole "Honorary Director" of the Boston Museum of Fine Arts, was created in recognition of the eminent services rendered to the museum by Mr. Perkins, and ceased when he no longer held it. He was, also, a life member of the Metropolitan Museum of Art, in New York. His voice, pen, and purse were ever at the service of these various interests. Freed from the need of earning money for himself, he was industrious in public duties; though holding no political or governmental official positions, other than as a member of the school committee. In the arduous work of introducing Drawing in the schools of Boston, he was, as has been abundantly shown in the previous volume of this Report, ever watchful and earnest.

In view of the pronounced opposition to the movement, made by some artists, the fact that Mr. Perkins, so well known for his art abilities and knowledge, was an enthusiastic promoter of the movement, was of great weight in influencing public opinion.

It was through his acquaintance with the South Kensington authorities that Professor Walter Smith, was selected by them as the best teacher in England to introduce drawing into a new country. It was largely due to his cordial co-operation and hearty support, that Dr. Philbrick, and Professor Smith, were able, in spite of serious opposition, to procure the establishment of the State Normal Art School; and to gain a foothold for Drawing in the Boston public schools, and in the schools of the State. He was a consistent friend and supporter of Professor Walter Smith, through all his official life in America, and through the complications which eventually resulted in the return of that remarkable man to England.

A PROLIFIC AUTHOR ON ART TOPICS.

Mr. Perkins, was widely recognized as an able art critic, and author. In addition to many papers, addresses, talks, and communications to the press on art subjects, he published no less than seven important works upon Art. At the time of his death he was the critical editor of the "Cyclopedia of Painters and Painting," a large and beautifully printed work in four volumes.

AN IDEAL CITIZEN.

With all these interests, and with large social demands, Mr. Perkins nevertheless found time, for many years, to give to arduous service in behalf of the schools of Boston. How many citizens similarly situated have so high an idea of their civic duties, and are equally ready to sacrifice personal comfort and tastes to their performance? The death of such a citizen is a grave loss to the community in which he has lived. The news of the death of Mr. Perkins, caused general sorrow; not only to his immediate circle of relations and friends, but to all who had occasion to know of his great usefulness and his beneficent life. Happy the City, and the Country, that can number such citizens! The accident which terminated the life of Mr. Perkins, happened on August 25th, 1886.

To the present writer this loss came not only as a personal sorrow, but as a calamity to the work on which he was engaged, and in the execution of which he had so often occasion to gratefully appreciate the cordial interest shown, and help freely afforded, by Mr. Perkins.

PROFESSOR WALTER SMITH, ART MASTER.

The fact that no acknowledgment came of the receipt of the copy of the first volume which had been sent to Professor Smith, at Bradford, England, occasioned some surprise; but the sad reason for this omission, owing to his long and alarming sickness, was not known for many weeks, until announced in a touching letter by the daughter of Professor Smith; in which the statement was made that he had received the volume and looked over it with much interest, purposing to acknowledge it himself by a letter, which he had several times begun to dictate, but was never able to complete. The writer further stated that it was only because it was then evident that her father could never complete it, that she had written. This letter was followed a few days later by another, containing the sad announcement of the decease of her father.

So, in a few short months, as before indicated, the three men, the story of whose remarkable and successful undertaking was told at length in that volume, had passed from earth! "They rest from their labors, and their works do follow them."

It was with a painful sense of loss, that the work of preparing this Report was again taken in hand.

They, meanwhile, wander together in Elysian lands!

Those whose wisdom, enthusiasm, and experience had constantly aided and stimulated the writer, were no more. The very movement they had, with marvellous skill and force, inaugurated; was already in danger of being misdirected. How often, in thinking of each of these men, realizing of what value their warnings would have been, how they would have held high the ideals which inspired their movement; and have furnished the just standards by which the theories of too enthusiastic educators could have been rectified; some lines, from that noble tribute which Sir Walter Scott, in the introduction to Marmion, pays to the greatness of Pitt, recur to memory:

Hadst Thou but lived, though stripped of power,
A watchman on the lonely tower,
Thy thrilling trump had roused the land
When fraud or danger were at hand!

WALTER SMITH IN AMERICA.

Of the ability of Walter Smith, and of his record in America, there seems little need to enlarge.

The story of his selection by Sir Henry Cole, and the South Kensington authorities, to undertake the great work of introducing elementary art training in American public schools; of his welcome in Boston; of the opposition overcome, the success secured; has all been told in detail by his associates, the educational officials of Boston and Massachusetts; and by himself, in the official reports quoted in Part I of this Report. Sufficient reference was, also, there made to the termination of his twelve years of official life in America.*

HIS FINAL EXPERIENCE TOO COMMON AMONG AMERICAN EDUCATORS.

In view of several similar experiences, by deserving, faithful, and distinguished State and city school superintendents, which have since occurred in various localities, the unwisdom and injustice of which have been widely recognized; the treatment—which, to Professor Smith, and his friends seemed so cruelly unjust—threatens to assume the aspect of a not unusual incident in the experience of American educational officials. Whether elected or appointed, the duration of the official term of an honest, energetic, capable Superintendent of Schools, seems self-limited; owing to causes similar to those stated by Dr. A. A. Miner, on the occasion of the first "Commencement" of the Massachusetts "State Normal Art School," when he said: "Every institution vigorously administered—and I believe the vigor of the administration of this school has not been questioned—runs across somebody's path, and produces more or less of antagonism through interest, envy, or personal conflicts and prejudices." †

RARE GIFTS AS TEACHER.

Walter Smith, who came to America in the prime of early manhood, was, in himself, a splendid example of manly health and vigor. He possessed that "rare gift of magnetism as a teacher," "a gift," says President Dwight, of Yale College, referring, in a recent address, to its absence in another, "which, so far as my knowledge of teachers extends, is far more rare than any other." This gift, Professor Smith, possessed in no scant measure. With a powerful physique and an enthusiasm which was boundless, he trod the platform as a master and held his large audiences as if but a single listener. His ability to inspire others with like enthusiasm was most remarkable. He won the love and devotion of his pupils, and it is by them, and by them alone, that the development of the movement inaugurated in Boston, is to be prosperously conducted, if indeed it is to continue.

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* See Part I, page 193, and Appendix D.

† See Part I, page 159.

PERSONAL CHARACTERISTICS.

He embodied all the characteristics of the English type, and in this fact there was abundant opportunity for friction in intercourse with Americans. Fully conscious that he was master of his subject in all its relations, as he unquestionably was, and knowing that there was no one else in the United States who could justly claim any such fullness of knowledge, he was intolerant of its assumption; but to his scholars, who approached him in a teachable spirit, he was as gentle and lovable as a woman. The opposition to the teaching of drawing in public schools, offered by a few artists in Boston, and, ostentatiously, by "The New York Nation," he met with contemptuous scorn. An artist himself, who for his art work had won highest praise from critics of unquestioned authority, he was also a trained and practical teacher, and, naturally, felt his own experience and judgment to be far more weighty than the vague theoretical assertions of a few artists without such experience; while himself a man of the people, as well as a man of genius, and therefore a believer in the rights of all, he realized that the underlying motive which actuated the critics of the "Nation," was hostility to free public schools; and, *therefore*, to his efforts to make these schools more useful.

Great gifts seem, by the law of compensation, to be accompanied by their own peculiar characteristics and even weaknesses, and we do not ask from the high-bred racer, the same kind of labor that is exacted from the heavy draft-horse, or from the slow-moving patient oxen; yet, in dealing with their fellow-men, many seem to ignore like differences; with resultant foolish mistakes and needless failures.

A SERIOUS MISCONCEPTION.

Walter Smith, whether rightly or erroneously, believed when, yielding to urgent solicitation, he consented to abandon an assured career in England, to undertake a great and uncertain work among strangers, that the positions he accepted were permanent, and not to be contingent on any annual elections. With characteristic enthusiasm he gave his whole heart to the work; he accepted America as his home and the home of his children. Realizing the magnitude of the task before him and the glory of success in its accomplishment, he gave to it all the wealth of his richly endowed nature; and the results effected by this one man's work and influence were marvellous. The various official reports of that time, as quoted in the preceding volume, give ample evidence of the profound impression made by this man upon educators and legislators.

THE TRIUMPH OF OPPONENTS.

The assaults upon the Normal Art School, and upon the Director of Drawing, were frequent; and have been sufficiently set forth in the previous volume. Owing to these unjustifiable attacks, the last years of Professor Smith's official administration were stormy; though from many a stubborn fight he emerged victorious. When, however, owing to the accidental absence of some of his friends who had frequently repulsed similar attempts, a small hostile majority of votes, in the school committee, was obtained; and he was suddenly deprived of the official position he had so honored; this great warm-hearted man received a deadly blow. Unfortunate disagreements with the firm which published his works, aggravated the situation. It now is clear that the opposition to his further connection with the Normal Art School, and with the public schools of Boston, had been so well organized, that his longer stay was, in any event, practically impossible.

HIS RETURN TO ENGLAND.

Struck down when success had crowned all his efforts, and when but a few years of work were needed to confirm and make permanent the new methods; not only the personal disaster, but the danger threatened to the eventual success of the movement he had so earnestly striven to establish, was present to him; and, with keen disappointment, after having given the best years of his life to his efforts to advance Industrial Art Education in America, Walter Smith, returned to England, a heart-broken and impoverished man! He was received there with affectionate enthusiasm and at once made Art Director of the Art Department of the newly founded great Technical College at Bradford.* His former position in England, when chosen to go to America, was so well established, and his work in America had been so distinguished, that he was heartily welcomed home.

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*See Part I, page 62, with note.

THE CLOSING SCENE.

From the letters received from his daughter, referred to above, are taken the following passages. Under date of September 13th, 1886, Miss. Smith writes from the residence of her father in Bradford, Yorks: * * *

"Your valued book came safely and afforded my dear father a great deal of sincere though sad pleasure. It was just about then he was beginning to get so ill. The testimony to his life's work has been brought before the public, and they who read the book must realize that it *was* a life's work, but the reward he got has killed him. * * * He has never been really well since he came back to England. The treatment he received at the hands of those he had so much benefited, seemed to break down his spirit; being sensitive by nature he *felt* it much more than many men would, and warmly as he has been welcomed here, and enthusiastic as old friends have been, that bitter end to everything in America, was never forgotten and never overcome."

The hopelessness of his recovery was stated and, from the next letter, under date of October 3rd, 1886, it appears that his death was even more imminent than then anticipated, as he died on the day following:

He died on the 14th of September, the fifteenth aniversary of the day we sailed to America. It was on Tuesday he died. Since the previous Sunday afternoon he was unconscious but he died in peace and happiness. He forgave others, as he himself hoped to be forgiven, and the last words upon his lips were: For Jesus Christ's Sake, Amen. * * * We buried him in the beautiful village of Kemerton, Gloucestershire, by the side of his Mother and Father, and not far from the house in which he was born. All the villagers followed the hearse to the Church Yard and heaped up the grave with flowers, paying what respect they could to one whom they all knew and dearly loved.

With this peaceful picture limned by the hand of filial love, ends this story of a life of brilliant promise, of great achievement, of almost tragical conclusion.

There in that quiet English church-yard, where—

Each in his narrow cell forever laid
The rude forefathers of the hamlet sleep

the remains of Walter Smith, were, by the hands of loving friends, tenderly laid—

To rest beneath the clover sod,
  That takes the sunshine and the rains,
  Or where the kneeling hamlet drains
The chalice of the grapes of God.

Doubtless, in view of those closing days in America, it is a consolation to his early friends to feel that his final rest is in English ground; for, on a like occasion, the poet, greeting the returning body of his lost friend, voices a natural sentiment in the following lines:

> Tis well; 'tis something; we may stand
> Where he in English earth is laid,
> And from his ashes may be made
> The violet of his native land.
>
> Tis little; but it looks in truth
> As if the quiet bones were blest
> Among familiar names to rest,
> And in the places of his youth.

Here in America, in widely scattered homes, the young men and women who rejoiced to sit at his feet, and who caught the inspiration of his enthusiasm, will long cherish his memory and mourn his loss; while those who recognized the uncommon genius of the man, that magnetic power which made him pre-eminent as a teacher and inspirer of youth, and who realize that, in the nature of the case, he could leave no single successor whose decision in matters relating to art training, would be recognized as of equal authority; can never cease to regret that his career in America, the country for which he had done so much, and for which he had hoped to do so much more, should have been, for any reason, prematurely and infelicitously ended.

Grievous as was the loss to him, it was still more unfortunate for the Country which so needed him, and never more than now!

His name no longer appears on the series of drawing-books to which his name alone gave prestige;* and to the majority of the rising generation of Americans, his name will, perhaps, be wholly unknown. Already a recent foreign writer credits the publisher of his works with having himself done the great work of introducing the study of drawing into American public schools! This achievement, as has been shown, was the work of no one man, but the result of a fortunate alliance of several gifted men, and this publisher is undoubtedly entitled to a just share, and a large share, of credit for its promotion, which was always freely accorded; yet, it remains true, that, but for the far-seeing wisdom of Dr. Philbrick, the wide knowledge and influential efforts of Mr. Perkins, and the rare for-

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*It is understood that some time towards the latter part of his directorship of drawing in the Boston schools certain *changes* had been made by the publishers, in the books, which Professor Smith disapproved and therefore would not suffer to be used in the schools under his direction, and for which he refused to be responsible. The publishers, it seems, elected to retain these changes and, by giving the series a new name, to relieve him from any responsibility for such changes.

tune which sent from England such a genius as Walter Smith, there would have been no occasion for any such publisher; and no opportunity for the subsequent employment by him of a corps of assistants to compile drawing-books.

Those who were privileged to know Walter Smith, as a friend, must ever cherish the memory of this warm-hearted, great-natured man of genius.

It is not a pleasant thought that, by his death, his widow was left with a large family of young children, and almost penniless!

One could wish that the Country, which has so benefited by his services, could find some way of caring for his devoted widow and their orphaned children; yet to the actors in the world at large, busy with its every-day work, absorbed in manufacturing and merchandise, the quiet lives and uneventful histories of those who are shaping the coming generation are almost wholly unknown. The debts owed by the community to the great teachers of mankind are not usually realized till long after they have passed beyond earthly reward. It is for ourselves, and not for them, that the recital of their services is of value.

COMMEMORATIVE RESOLUTIONS BY EDUCATORS.

On the occasion of the annual meeting of the National Educational Association in Chicago, Illinois, in July, 1887, at the regular meeting of the Art Department, formal notice was taken of the decease of Professor Smith, as follows:

Mr. Geo. H. Bartlett, of Boston, Mass., offered the following resolutions and moved their adoption :—

Whereas, It has pleased Almighty God to remove by death Professor Walter Smith, to whom is due the honor of being the pioneer in American art education, and of giving a lasting impetus in the direction of a rational system of industrial art; and,

Whereas, The present is the first meeting of the National Educational Association since his decease; be it

Resolved, That the Department of Art Education now assembled, hereby expresses its appreciative recognition of the great value of his work in this country, and of its moulding influence in the American public schools.

Resolved, That this Department tender its sincere and heartfelt sympathy to his family in their great loss; and

Resolved, That the secretary of this Department be instructed to forward a copy of these resolutions to the wife and family of the deceased.

The motion was seconded by Dr A. A. Miner, of Boston, Prof. L. S. Thompson, of Iowa, and Chas. H. Ames, of Boston.

The resolutions were unanimously adopted.*

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* Journal of Proceedings and Addresses of the National Educational Association, session of the year 1887, held at Chicago, Illinois. See page 554.

THE INFLUENCE OF CONTEMPORARY MOVEMENTS SHOWN BY THE COMPULSORY CHANGE IN THE TOPICS OF THIS VOLUME.

Curiously confirming the statement made a few pages back, that such a contemporaneous report as is here attempted illustrates in itself, the varying phases of the movement it describes; is the fact that in the present volume the author has been forced to record mostly the attempts to introduce in the schools "industrial training," instead of "industrial art training;" so that the title of the first edition of Part I, as then *mis*understood, would be almost accurately descriptive if given to the present volume.

So many occasions offer in the text which follows, for comments in regard to a change of purpose on the part of educators, and in protest against the evident neglect or perversion of the art idea among the promoters of the new education, that it is unnecessary here to dwell upon those features of the movement.

In treating topics of such vitality as is shown by all forms of this new movement there is constant liability to omit notice of many which may be in themselves of greater importance than some of those which are included, and there is no doubt if the matter of these volumes could be had collected at one time to be culled from, that some very radical changes would result; but the critic should remember that such a comprehensive work can be made in no such easy way—each passing month, and year, conspires to make much already collected comparatively obsolete, and to modify opinions whose expression is, it may be unfortunately, already fixed in the type.

PROSPEROUS KINDERGARTENS IN VARIOUS CITIES.

In the Appendix devoted to the Kindergarten (Appendix J), for instance, if that phase of education were alone in consideration, it is hardly to be thought that the successful experiments in St. Louis, in Cincinnati, in Cleveland, in New York, in Philadelphia, and the grand work in founding free kindergartens in San Francisco, undertaken by charitable citizens, which has gone on in that city for the past decade under the wise direction of Mrs. Sarah B. Cooper, would, by any chance, have been omitted.

AN IDEAL ORPHANS' HOME IN BALTIMORE, MARYLAND.

In like manner the ideal orphans' home in Baltimore, presided over by Miss Helen J. Rowe, and known as "The Samuel Ready

Home for Orphan Girls," which does for girls what Girard College essays to do for boys, would merit minute description. In this school home, drawing is carefully taught, with the common elementary English studies, to all the children; who are, also, thoroughly trained in the knowledge and practice of all matters suitable to their years relating to the household, and instructed in domestic economy. If any child shows marked aptness for any special development, the special training thus indicated is given.

The feature which differences this from many other similar "orphans' homes," is the care taken to prevent any consciousness by the children that they are inmates of a charitable institution; while, in many so-called orphans' homes, there seems to be a constant effort to impress this one fact upon the consciousness of the unfortunate child-inmates. In this truer "home," on the contrary, the development of the independence, self-reliance, self-respect, and personal character of the individual child, is a constant purpose kept in view; in connection with the effort to surround all with the protection and happiness of a home. The children of this family, inmates of a cheerful, well-ordered household, may well be reckoned as exceptionally fortunate. Here the spirit of Fröbel's ideals of child happiness and child development, seems to be admirably embodied; though not shown by formal kindergarten methods.

The excellent methods here adopted are, indeed, well worth the careful study of all interested in similar establishments; yet, in this instance, as in so many others of exceptional success, the secret must be held to lie rather in the personality of the individual teacher, than in formal, communicable methods.

ENDOWED SCHOOLS AVAILABLE FOR TESTING EDUCATIONAL METHODS.

Such schools, as has been elsewhere noted in connection with the account of Girard College,* have, as compared with the public schools, a great advantage in carrying out educational experiments, owing to the fact that while attendance on the public schools is, often, for any given number of children, uncertain and intermittent; these schools retain their pupils from early childhood to graduation, and, so, can pursue with them a definite, pre-arranged course of training throughout the entire school period. It is, therefore, for the reason that in these schools the experiments of proposed changes in the methods of the public schools can be tried under the most favorable conditions that, in one or two instances, an account of the results of introducing the new methods in such special schools is given in this volume, otherwise wholly concerned with the public schools.

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*See Chapter XIX, page 448.

A Novel Method for the Normal Art Training of Teachers.

A successful plan to supplement the usual methods for disseminating a practical knowledge of drawing among teachers unable to attend a Normal Art School, or to receive special instruction from a Supervisor of Drawing, or from a normal art teacher, and yet who are required to teach drawing in the public schools, has been put in practical operation by the Prang Educational Company, of Boston, Massachusetts, who have, it would seem, taken a leaf from the lessons set by the Chautauqua people, and by the friends of "University Extension," and have organized "Normal Drawing Classes for Teachers in Public Schools" to be taught by correspondence. Mr. Louis Prang, Mr. John S. Clark, and Mrs. Mary Dana Hicks, with five competent assistants, constitute the "Faculty" of this School of Correspondence. During the three years since this novel "school" was opened hundreds of teachers, living in all parts of the United States, have availed themselves of the opportunity thus offered. The instruction covers substantially the methods and features of "Form Study," "Drawing," and "Color," pursued in the leading public schools of the country in which drawing is taught; and is in entire harmony with the technical instruction given in the principal Art Schools. This method has the approval of many of the leading educators and specialists in drawing, and offers a ready opportunity for the general diffusion of this study; furnishing, as it does, the facilities of a Normal Art School for the whole country.

Need of Strictly Defining the Nomenclature of the New Education.

In the opening chapters of the present volume* an attempt was made to analyze the terms used by the advocates of a change in the methods of training in the public schools, in the hope of reaching some general consensus as to the meaning and use of the terms which

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*See Chapters VII and VIII, page 55 *et seq.*

were then so variously applied as inevitably to lead to confusion. Not only was there confusion in the terms used in the discussion, but a similar vagueness in the claims put forward for the new methods. The extravagance of many of the enthusiastic advocates of sweeping change,—an extravagance which, in some instances, led to indiscriminate condemnation of all previous systems and methods of education,—led naturally to opposition, and the critics found themselves criticised in turn, by more temperate but not less effective opponents. This conflict of opinions has kept pace during the past four years with the increasing experiments which are recorded in the ensuing pages, and has, fortunately, resulted in the abandonment by the extreme advocates of manual training, of several positions which, under the fire of their witty antagonists, proved wholly untenable. The discussion meanwhile proceeds with unabated vigor, but it is evident that the leading advocates of the new movement occupy more tenable positions than those first taken by some of their advance guards; while, on many points, the leading educators of the country are approaching agreement. There is one phase of the matter in which, however, there seems on the part of some of the leading advocates of the manual training movement, no approach to agreement with the followers of Dr. Philbrick, and Mr. Perkins, who seek, by definite training, to develop the æsthetic faculties of American school children.

The Manual Training School people, as represented by the St. Louis and the Baltimore School, for instance, seem to seek nothing in their teaching of drawing beyond, or other, than its utility. Herein lies an essential divergence. This exclusive attention to mechanical drawing may, perhaps, be justified in the Manual Training High School, but when similar drawing is taught in the elementary schools, and the *utility* of drawing is made the chief argument for its adoption in schools: the different aims and purposes of the two classes of educators become readily apparent. Since both ends of drawing are legitimate and desirable, and not of necessity antagonistic,—since both may be taught and developed in the same school—and, since the necessary preliminary elementary training is the same for both, it is a little surprising to see the animus aroused on the part of the manual training champions, by the final paragraphs of the report made in July, 1889, at Nashville, to the National Council of Educators, by the Committee on Pedagogics: in which attention is called to the possibilities for artistic training which may profitably be availed of in the teaching of industrial drawing. This idea seems to one of the critics of that report only worthy of ridicule; which confirms the fear, frequently expressed in the following pages, that the *idea* of "Art" had been suffered to drop out of the minds and purposes of these educators in connection with their teaching of drawing, just as the word itself had been eliminated—"Industrial Art Drawing" being changed by them to "Industrial Drawing."

"THE NASHVILLE REPORT" AND ITS CRITICS.

The report on "The Educational Value of Manual Training" made by the Committee on Pedagogics, at Nashville, just referred to, was received only in season for insertion in Appendix "L" of this volume.*

This report, which was vigorously combatted by Professor Woodward and some others at Nashville, has been followed by the issue of a pamphlet in which its positions are formally criticised and combatted.† As this pamphlet is received too late for insertion in the appendices, where it would otherwise appear in Appendix "L," with the report it criticises, it is referred to and quoted from here in this introductory chapter, in accordance with the principle adopted throughout this Report, namely: that of letting the various authorities and disputants speak in their own words, as far as possible.

It will be seen that Dr. Woodward himself, recognizes the extreme lengths to which some have gone in their undue advocacy of manual training; and that, on many points, there is little or no difference between himself and those educators who, while they oppose the absurd claims made by some, recognize that the Manual Training High School has a legitimate place in any scheme of popular education.

The efforts by which some indiscreet advocates strive to belittle language and enhance manual labor—exalting "things" and abasing "words"—have, perhaps, led some educators, who believe that words and things are only of value as representing thought, and that all training must be training of the intellect, to over emphasize the need for full recognition by all methods of education of the spiritual and intellectual nature of man, in so far as Dr. Woodward is himself concerned; for he makes no issue on that point, but yet seems to feel called on to resent the implied censure cast upon his coadjutors in the advocacy of manual training.

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* See Appendix "L," Paper XIV, page 931.

† In view of the fact that Professor Harris, one of the Committee making "The Nashville Report," which is reviewed in this pamphlet, is now the Commissioner of Education, it seems proper to state that for what is here written concerning "The Nashville Report," and of the criticisms by its reviewers, the Editor of this Report is alone responsible; as neither Dr. Woodward, or Dr. Harris, will know anything of it till this volume is published.

I. EDWARDS CLARKE,
Editor "Art and Industry" Report.

January 16th, 1891.

If, however, he will revert to some of the arguments that have been urged by such other manual training advocates, he must admit that this protest in recognition of the higher nature of man was not uncalled for.

The pamphlet issued by Dr. Woodward* contains 95 pages, of which 84 are given to elaborate criticism of the report, which is taken up division by division, seriatim. Dr. Woodward's criticism fills 59 pages, and Mr. Morrison takes 24. The report itself is given in full in an appendix.

It is due to Dr. Woodward to remember that he has never made any claim that a manual training school taught æsthetics, or was in any sense an art school. He claims it as a high school, with a specialty of giving instruction in the use of tools. However much he may talk of manual training schools in general, it is clear that he has ever in mind as representative of the class the particular school over which he presides. That school, so far as it differs from an ordinary high school, may be fairly characterized as a school in which the use of tools is taught. It is, perhaps, possible now to say that educators generally are agreed that such special schools of the class of the St. Louis school, and that of the Massachusetts Institute of Technology, are desirable for a limited number of boys. Dr. Woodward, possibly fails to recognize tendencies in other schools which are criticised, because he is confident that such conditions do not exist in his own school.

Those who believe in the possibility of general elementary art training, and in the development of the æsthetic faculties of children by means of industrial art drawing, are *not* satisfied with the almost absolute ignoring of any art training which seems to be a growing tendency with many of those who advocate manual training; who seek to have Industrial Training permeate all education, and who neglect that of Art.

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* "The Educational Value of Manual Training, consisting of an examination of the arguments presented in the report of the National Council Committee on Pedagogics, at Nashville, July, 1889, by C. M. Woodward, of Washington University, St. Louis, and a critical review of the same report by Gilbert B. Morrison, of the Kansas City High School. With an appendix containing the Council Report in full. D. C. Heath & Co., publishers, Boston, New York, and Chicago, 1890, Pp. 95."

There is another aspect of the manual training movement, so called, which the authors of the committee's report evidently view with apprehension. In the present era of marvelous material development there is a constant tendency to lose sight of all other considerations. The movement for the introduction of some forms of industrial training in schools has been so persistently urged on utilitarian grounds alone—the educative value of the training having been largely ignored until recently—that the child has been apparently considered only as a future worker, and the whole subject of education narrowed to that single end. The assumption has also been made that the children of poor parents must themselves always remain in the same class, and, therefore, must be trained for that life only.

This un-American idea, is intolerable to all who believe that a capacity for progress is latent in the individual, and in the Race, and that the Education which recognizes and develops this, is the *only education* worthy of serious concern.

This eloquent protest is, therefore, directed against the limitation implied by the animus, shown by some advocates of industrial training, towards all past forms of education and culture, and the proposition to substitute the dicta of their shallow enthusiasm, in place of the experience of the race; in short, it is animated by a noble spirit of revolt against any such degradation of the ideals of humanity, and of education. It is directed not against the special technical elementary schools of which Professor Woodward's school is the recognized type, but is an examination of the broad claims, latterly advanced for the whole system which includes these schools; and of the theories, in accordance with which, the proposed changes in the purposes, as well as methods, of the public schools, are advocated.

In discussing this question in its entirety much is said which in no wise applies directly, or even indirectly, to the manual training schools of the St. Louis type; and when Dr. Woodward, repels an accusation which he seems to consider is directed against schools of that class, he occupies a strong position; only he fails to recognize that it is one that has not been assailed. All are agreed that, for certain purposes, these techincal manual training schools are admirably adapted.

The report to the Council at Nashville, is twofold in its character; dealing, as it essays to do, with the two classes of claims that have been urged in favor of manual training. It considers first, the economic argument which has been, at times, urged so far as to give occasion for a general impression on the part of the public, that if this training were adopted, the pupils would, on leaving school, be ready at once to enter as workmen in the productive mechanical industries. Assuming this to be the case, the report protests against this early introduction of childhood to the grinding routine of work.

Secondly, it takes up and controverts the extravagant claims which are sometimes advanced for the educative value of manual training; and, while admitting that it possesses certain educational qualities, demonstrates that the claim, made by some advocates, that this method of education is superior to all former methods, is not only extravagant but illusive. This contention of the committee is practically admitted by these critics of their report; as is manifested by the eagerness with which they, on their part, proceed to show that in the manual training school proper, the ordinary high school literary studies are carefully taught.

The report is comprehensive, suggestive, and corrective; the logical conclusion of its arguments would be to place this new phase of education in just relations to other methods which have stood the test of time, and so to adopt it as a valuable addition to the recognized means at the disposal of educators. The more thoughtful advocates of the new movement in education, as it is termed, were early forced to realize that the claims put forward by many enthusiasts were wholly untenable; therefore, the positions assumed were gradually shifted, as will be seen by a study of the contemporary records contained in this volume, until the utilitarian arguments which had before been paramount are now largely ignored; and the claim of its superior pedagogical value is boldly advanced. In the opinion of some leading educators this claim, as asserted, is extravagant; and this claim it is, which is particularly considered and controverted in the "Council Report."

In most discussions of this comprehensive subject it is soon evident that the disputants are talking about different provinces of the subject; one is attacking a general claim, the other is defending a particular class of schools; and, therefore, the attack and defence seem often like sword thrusts against imaginary combatants; the blades swish through the air with a great show of skill and strength but the result is bloodless. Like Milton's angels the duellists seem to bear charmed lives and "vital in every part, cannot but by annihilating die." Something of this character is shown in the discussion embodied in this pamphlet review of the Council Report.

This pamphlet opens with Professor Woodward's article, which begins as follows:

THE EDUCATIONAL VALUE OF MANUAL TRAINING.

> There is every indication that the interest in the aims, methods and results of manual training is spreading and deepening. Extravagant notions are being laid aside, and correct and reasonable views are taking their place. Persons who had supposed that there was nothing in it—that it was only a craze, are finding that there is something in it worthy of consideration and respect. Those wild enthusiasts who claim everything for it are gradually forming a class by themselves quite apart from those who are steadily testing every theory by careful practice.
>
> There is, however, much confusion as to the true scope, meaning and value of manual training. It is my sincere wish to do what I can to give trustworthy information on the subject, to the end that manual training may take its true place in American education. Accordingly, I have gathered here certain reviews and discussions which I hope will be found useful. I do not here present any full discussion of the economic value of manual training, but it must not be inferred that that value is not high. On the contrary, I think its great practical utility would be a sufficient argument for its introduction into certain grades of all schools, were its educational value much less than it is. But its educational value is great as well as its economic, and since I am now concerned in setting forth the former, utility arguments may be left to present themselves. Many people, teachers and others, are prone to consider *direct utility* as unworthy of any place among educational aims.
>
> This leads me to call attention to the universal tendency of public opinion to drive people and institutions in extreme positions.

He then proceeds to consider the opposing theories of education, that which finds the best training in non-useful studies, and that which looks only to the direct utility of the studies taught, and discreetly claims "that both exclusive and extreme positions are bad."

Dr. Woodward seems to think that the Committee have unjustifiably broadened their domain, in not confining their attention to the "Manual Training School" proper, pure and simple. As the Committee, at the outset, seem to grant all that could reasonably be claimed for these special schools, this would be open to a charge of disingenuousness were it not that the Committee seem, also, to have considered those schools as the complete substitutes for apprenticeship; whereas the present position of their advocates is, not that they are substitutes for apprenticeship to particular trades, but that they give the best possible preparation for the pupil who may desire, after graduating from them, to learn any one of the mechanic trades; and that the special manipulation of a given trade must be learned in the shop or factory. Much space is given by both authors of the pamphlet to elucidating these points. The fact that the Committee had in view the whole subject comprehended in the "industrial" or "manual training" phase of the so-called "new education" which embraces alike Kindergarten and Technical Manual Training Schools, is apparently ignored by their critics.

The Committee, evidently impressed by the urgency of those who, in their zeal for this new thing, denounce all the old methods, have thought it important to go to the foundations and to sift these assertions, and then to show *why* it is important for all to be able readily to read and write; and why it is so desirable that those whose after lives may be doomed to severe toil, should in infancy and childhood, have their higher faculties of imagination, and their capacities for innocent enjoyment, developed and gratified.

Throughout their report they use the term "Manual Training" with this comprehensive meaning. Their critics would make it appear that all their remarks were meant to apply only to the technical "Manual Training Schools!" So, in this latest discussion, as in the earliest ones noted in this volume, there is seen the confusion arising from the lack of a definite nomenclature.

In the following extract Dr. Woodward, concisely shows the general training given in the Manual Training School proper, and how it differs from apprenticeship to a trade:

> Now what are the "cold" facts in regard to the curriculum of the manual training schools? I think I can answer for nearly every one of them:
>
> *First.* The curriculum gives one-half as much time to drawing as to tool-work.
>
> *Second.* It gives as much time (study and recitation) to mathematics as to tool-work.
>
> *Third.* It gives as much time to science (theoretical and practical) as to tool-work.
>
> *Fourth.* It gives as much time to language and literature as to tool-work.
>
> No "trades" teach drawing, or mathematics, or science, or literature. All these things must be included to make up the curriculum *entire* of a manual training school. In confirmation, see the catalogues of the manual training schools of Chicago, Baltimore, Philadelphia, Toledo, San Francisco, St. Paul, Cambridge and St. Louis.

After protesting that the Committee have misrepresented the curricula of Manual Training Schools, Dr. Woodward, thus closes this section of his article:

> I insist that the influence of manual training in school education shall be studied under the conditions in which it is given in education. There is absolutely no question about its educative value under other conditions. We are discussing schools and school-work, and nothing else. If the influence of manual training *as it is taught in manual training schools* and in connection with all the other school work, is not yet sufficiently manifest in the lives and characters of those who have received it, then let us not attempt to give it by reasoning from effect to cause. Leave that phase of the discussion till adequate data are at hand, and confine the present discussion to an analysis of the character and contents of manual training, and, reasoning from cause to effect, determine its influence upon the minds and characters of school boys.
>
> It may be answered that the Report gives such an analysis and such a course of reasoning. Such a claim I should flatly deny, for the processes it analyzes are those of factories and not of schools, and then, for the most part, it attempts to determine the influence of such factory methods on illiterate, unscientific people. But the difference between school work and factory work needs to be set forth at length.

After several pages devoted to a defence of Manual Training School methods, which, in view of the fact that the Committee's remarks were, as we have shown, not limited to these particular schools, seems somewhat irrelevant to this discussion, Dr. Woodward, thus closes section V, which is entitled "Manual Training compared with the study of Pure Science." In this section he gives the following interesting and valuable statement of the purposes and limitations of these special schools:

DR. WOODWARD STATES THE PURPOSES AND LIMITATIONS OF THE TYPICAL MANUAL TRAINING SCHOOL.

> In my judgment the field of pure science lies, far beyond the range of the manual training school, in the higher realms of the technical school. The pupil must creep before he can walk, and he must walk before he can run. In the manual training school we can hardly claim to do more than to help him to walk. His point of view is narrow, his horizon near, but if he sees clearly what he sees at all, and grasps firmly what he puts his hand to, he will with increasing strength and a broader vision "ascend from thought to thought," to a just conception of the scope and meaning of science.
>
> My answer is, then, that, on the assumption that the exercises of the shop of the manual training school consist solely of machine-making, for the purpose of illustrating the principles and applications of pure science, their argument still does not touch us, for our plan of *combining theory and practice* is a vast improvement over either alone. (2) The chief purpose of our shop-work is *not the study of science* as that phrase is ordinarily understood. The work I referred to above, that

of constructing and using physical and chemical apparatus, is quite distinct from our regular course of shop-work. Of course, there is more or less science in all shop-work, for every mechanical process and the form and theory of every tool are based on established principles of science; yet the main object of shop exercise is not to gain a knowledge of those established principles.

Just here is the stumbling block of many an inquirer. It is often assumed that we must have one or more of these three objects in maintaining tool-work in school, viz:

1. To produce articles for the market or for domestic use.
2. To teach specific trades to those who wish or expect to follow them.
3. To teach and illustrate the principles of practical science.

Let me give the Committee credit for not holding the first opinion. I am not so sure as to their standing on the second point. As to the third point, the argument I quoted above appears to show that the Pedagogical Committee regard our tool-work as only a poor, narrow method of studying science.

None of the three objects are ours.

The primary object of tool-work (for there are many secondary objects) is *to develop and strengthen productive activity by gaining a mastery over materials and certain conventional tools and processes.* What we shall do with our materials and tools after we have mastered them we do not particularly inquire. They are suited to abundant uses, and the active mind will need them a thousand times in embodying thought and in effecting other ends. The most efficient method of arousing and stimulating the executive faculties is by giving one the sense of mastership over materials, forces, and appliances. One quickly desires to do what he first sees he has the power to do. The sense of mastership, of ability to smash, to break, to overthrow, which leads the undisciplined, unskilled youth to commit vandalism, may be converted into a sense of ability to build, to invent, to construct, to create; which leads to such things, as book-cases, dynamos, engines and cameras.

This conversion cannot be effected without teaching minutely what book-cases, dynamos, engines, and cameras are; and secondly, giving a mastery of the materials and tools to be used, and the principles of construction.

But while gaining this mastery, ulterior objects are kept out of sight, just as we keep the sonatas of Beethoven, and the nocturnes of Chopin, out of the sight of a child absorbed in the intricacies of scales, fingering, and counting exercises on the piano.

METHODS OF INSTRUCTION IN TOOL WORK.

For example (and I think it best to be quite minute on this point, for here is where many fail to appreciate our methods), we teach the boy how to grind his plane and oil-stone it, till it has a razor edge without flaw or feather. Then we teach him by precept and by example how to set his plane; to take it to pieces; to readjust it to the nature of his material; how to hold and push it so as to avoid unequal cutting on a side or at the end of a piece—and all this without any particular thought as to what he will make with his plane when he has mastered it.

In a similar way he is taught the proper care and use of every tool on his list. He learns how to work with, against, across, and on the end of the grain, with all kinds of wood from apple and ash, to walnut and willow. He learns how to treat a knot; how to use the brace and bits; how to avoid splitting when nailing, chiseling and boring; how to use try-square, gauge, and level, in accurately laying out mortices, dove-tails, etc.; how to hold his chisel and how to strike with the mallet; how to saw to a fit on the right or left of a line; how to match and glue, and polish, etc.

The pupil learns all these things abstracted from special applications. No lively interest in some proposed construction is allowed to "obscure his view" of the details of the work which must be mastered one by one. While making a joint, for instance, nothing is allowed to interfere with a full comprehension of its nature, its exact form and dimensions, and the order in which the steps of the process may best be executed. The question of what is to be done with the joint is not allowed to come in till he has thoroughly learned not only to draw it, but to make it.

In these several respects we teach tool-work and the properties of materials just as we do the details of algebra. Addition, subtraction, factoring, equations, elimination, and so forth, are taught without much reference to the uses of algebra in the study of physics, mechanics, astronomy and the higher mathematics. As a rule the teachers of algebra have no conception of its use beyond the solution of problems "made up" as illustrations. The real problems which gave rise to algebra, not one teacher in a thousand knows anything about.

A KNOWLEDGE OF FACTS IS GIVEN BEFORE THEORIES ARE TAUGHT.

Moreover, we give our student workmen facts to reason upon before we set them to formal reasoning. Scientific theories are the product of mature and well-informed minds. There is in recent educational efforts to teach the principles of science, far too much of a certain sort of shallow generalizing on one or two facts, and these more often borrowed or supposed than observed.

Hence, while teaching the use of the chisel and plane and knife, we say scarce a word about the theory of the wedge, and the inclined plane; while giving instruction in the use of the mallet, hammer, and sledge, we say little about momentum and kinetic energy; while teaching the exact and delicate operations of cutting V-threaded and square-threaded bolts and nuts we barely refer to the theory of the screw and to co-efficients of friction. By the time our pupils get far enough in our analytic methods of shop-work, to be able to make an entire steam-engine, they are near the end of the course and are familiar with an elementary theory of such engines. Having gained a fair mastery over materials and tools, they are now able to use them in the study of general principles and in the expression of thought.

MANUAL TRAINING IS EDUCATIVE.

If this mastery is well gained they have conquered a new world, a world full of thought and valuable experience, a department of knowledge fraught with wide uses and a generous human interest. With it one can never fail to be stronger, clearer, surer in dealing with the problems and duties of real life. In spite of the high authority of the Committee, the mastership of materials, tools, and industrial processes is educative in a high degree. The kind of knowledge acquired is far reaching in its applications and far more invigorating to the mind than the masses of details and circumstances that surround certain literary studies* which painfully impress many people competent to judge, as unhappily neither educative nor essential to any rational theory. Mr. Harris once said that a child trained for one year in a kindergarten would acquire a skillful use of his hands and a habit of accurate measurement of the eye which would be his possession for life. How can I adequately express the value of the rich and varied possessions gained by a boy in his teens, having a daily exercise of from one to two hours for three or four school-years in a good series of school-shops!

MANUAL TRAINING AND SCIENCE TEACHING SHOULD GO HAND IN HAND.

From this brief and imperfect sketch (for I have touched only upon a very few of the details of the manual branches taught in every good manual training school), it must be seen that there is no occasion for making comparisons, disparaging or otherwise, between the study of science pure or applied, and manual training. The two must go on side by side, and instead of trying to belittle one at the expense of the other we should aim to perfect both. This latter aim we greatly help by combining the two. No science-teaching without shop-work can possibly be as efficient as it easily becomes with it: and again, no shop-work carried on in a school where no science is taught can possibly be as luminous with thought, as where the two are carefully taught side by side. They are strong allies, and incidentally they serve each other continually.

Thus do I answer the argument of the report based on a comparison of the study of science with an assumed unscientific construction of individual machines; and thus do I show that while the Committee reasons badly on its own ground, its ground is not at all our ground, and that their argument is entirely irrelevant.

Dr. Harris, in his Ohio paper on the relation of high schools to colleges, says that while a knowledge of natural science, modern literature, and universal history was not demanded nor expected from an educated man one hundred years ago, things are now so changed that no man can pass for educated without more or less minute acquaintance with them. They have become recognized as "conventionalities of intelligence."

To that statement, which I accept, I would add that a more or less complete mastery of the materials, tools, and processes which underlie the vast industrial developments of this age of scientific application is fast becoming one of the "conventionalities of intelligence." It will no longer satisfy nor suffice to claim that a knowledge of the details of good workmanship, of the practical arts which underlie manual skill in whatever field of industry, has neither dignity nor educational worth. No Council Committee can be allowed to dispose of it as a "mass of non-essential circumstances."

There is danger that some unconventional fellow will voice public sentiment by

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*Such as "memorizing the etymological trash from the lumber room of antiquity."—Report of *Supt. Wm. T. Harris.*

some word meaning "over-conservative" while speaking of the Committee and their Report.

Mr. Brown in particular is very sensitive to the term "old fogy," which possibly some one has been rude enough to apply to him. I should be sorry to believe that he deserves the title; but let him not flatter himself that the list of "conventionalities of intelligence" has been closed. If he is left behind as our civilization rushes on at lightning speed, he must not expect that the melancholy fact will altogether escape the knowledge of his former associates.

If the Committee really wish to inquire into the educative effect of our shop-work let them examine it carefully in view of its primary object as I have related it above, and then see whether the mastery sought is generally worth gaining; whether there is a more efficient method of gaining it; whether our pupils really achieve it; and what its real educational in fluence is.

In the following paragraph Dr. Woodward shows that he is by no means a wild enthusiast, and in this particular statement there is little doubt that the authors of the report he criticises would heartily agree with him.

I hope we may not claim too much for manual training. I do not wish to say that there is in it anything which on fair trail will not be found there. It is *not* a panacea for all evils, social, domestic, or personal. It has no monopoly of educational values. It has not even a corner on good habits. It is a valuable educational feature, and should stand beside other valuable educational features, and be judged, as they are, by its fruits.

Dr. Woodward characterizes the report as follows at the end of his eighth division:

The position of the Report appears to me to be unsound, whether examined *a priori or a posteriori.* My conclusion is that knowledge, intelligence, skill, power and culture are always helpful in the acquisition of more knowledge, more intelligence, more skill, more power, and more culture. The more accomplished one is the easier new things are to him, whether in the realm of pure intellect or in the field where mind and hand are cultivated together.

In his ninth and final division, quotations are given from the 1889 report by Superintendent Seaver, of Boston, and "from the last of Superintendent MacAlister, of the public schools of Philadelphia,"* fully indorsing the worth and value of such Manual Training Schools. This final section of Dr. Woodward's article closes as follows:

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* For a statement in detail, by Superintendent MacAlister, of the results of the experiments in introducing Industrial Training in the Philadelphia schools; see his Annual Report for 1888, given in Appendix P of this volume, page 1189, *et seq.*

See, also, extracts from his annual report for 1889, in this Introduction, pages lxxx–xc.

Thus the work goes on. The intellectual fruits of a rational, well-proportioned system of manual training are so evident to every close observer and student of that training that I am sorry that the Committee are unable to see them. Manual training will go on all the same, and I hope that every member of the Committee will live to see that, far from being a power for mischief, it is a potent instrumentality for good; that it is a strong and friendly ally in promoting educational progress, and in ameliorating the condition of all classes of our people. I earnestly hope that manual training may be able to contribute something to bring about that splendid consummation, eloquently pictured by Geo. Wm. Curtis, when "with one hand education shall lead the young American to the secrets of material skill, and equip him to enter into the fullest trade with all the world; but with the other it shall lead him to lofty thoughts and to commerce with the skies.

From Mr. Morrison's "critical review" but a single paragraph is taken, and this for the reason that he sets forth in it the value of continuity in the training of the child, and recognizes the existing want of a connecting link of progressive exercises between the play of the kindergarten and the work of the Manual Training School. This hiatus has been generally recognized, and will be found often referred to in the ensuing pages of the present volume.

The followers of Walter Smith believe that it is best provided for, by a continuous, progressive course of Industrial Art Drawing, reaching from the small beginnings in the Kindergarten through the entire course of school education. The suggestion modestly made at the close of the Committee's report, that the Manual Training people had not sufficiently considered these claims, excites in Mr. Morrison nothing but inextinguishable laughter. He regards as ridiculous beyond expression those methods which such experienced educators as Dr. Philbrick, Charles C. Perkins, and Walter Smith, not to mention living educators, believed would solve this problem as to what form of sense training and æsthetic culture could be adapted to each stage of the child's education.

In the paragraph which follows it will be seen that Mr. Morrison ignores the fact that in what the report says of not beginning till the twelfth year the Committee plainly refer to the boy's entrance in the Manual Training Schools proper, just as, on the other hand, Dr. Woodward ignored the fact that the Committee, in any part of their report, ever referred to any other phase or institution of education except and only, such Manual Training Schools as that of St. Louis. Between these two equally unfair assumptions, the report of the Committee is unsparingly held up to ridicule.

Mr. Morrison says:

> But it might be well to stop here to reflect on the unsoundness of the statement that manual training should not begin before the twelfth year. Manual training means using the hands, as intellectual training means using the mind. And the former is essential to the normal use of the latter. Children learn more during the first five years of their life than during any subsequent five years. This is because they have more manual exercise during this period. They use their little hands continually, finding out the properties of matter, enjoying that reflex activity between the brain and sensorium, which is one of the fundamental conditions of correct thinking. Froebel recognized this principle when he founded the Kindergarten, which is nothing more than juvenile manual training. The fault of educational systems is that this manual training, or what might otherwise be called normal intellectual training, does not continue. In the stereotyped American school the pupil must stop this "play," form in line outside the school-house, march in when the teacher taps the bell, fold his hands that they may do no "mischief," toe the mark, and learn to read and spell. Read and spell what? Words, words, words! which often mean nothing to him. But it is done in good "form," and therefore supposed to be "all-sided." Froebel has done good service for primary grade; Professor Woodward and others for high school grades, and he who shall devise a system of manual training applicable to the intermediate and grammar grades, will do a service equal in value to either of these.

Those who wish to see these criticisms in full must, for lack of space here, be referred to the pamphlet itself; in which the Committee's report—the sermon-text of the two discourses which precede it—is given in full as an Appendix.

SUGGESTIONS BY SUPERINTENDENT SEAVER OF BOSTON.

As this introductory chapter is the latest to be put in type, opportunity is here given to sum up briefly the latest conclusions reached by educators. In the body of this volume, and in the Appendices, the progress of the movement in the Boston schools under the superintendence of E. P. Seaver, Esq., has been set forth. The following extract from the "Ninth Annual Report of the Superintendent of Public Schools of the city of Boston, March, 1889,"* includes all that the superintendent says in that report on the topic of a Manual Training School, for which he suggests a new and more distinctive name.

In his remarks on Kindergarten which precede this, he urges that the drawing begun in the Kindergarten should be continued and developed in the primary schools, and that the new fad of "the study of form, ought to be intimately united with the drawing" instead of separated from it. He also urges the necessity of the normal training of Kindergarten teachers, if success is to be hoped from those schools.

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*School Document No. 5, 1889.

A Mechanic Arts High School.

It is now six years since my great desire to see the educational wants of boys more fully provided for led me to make the recommendation "that there be added to our public-school system one manual-training school, thoroughly equipped for its work, occupying a place in the system side by side with the high schools, and open, under suitable conditions, to boys of fourteen years of age, and upwards." (Superintendent's Report, 1883, p. 47.) This recommendation was made somewhat tentatively, and less with an expectation of its immediate adoption than with a purpose, then declared, that there might be something definite and tangible to discuss and to urge upon public attention.

The time has now come when the same recommendation can be made with confidence, and urged by arguments drawn from accumulated experience. Six years ago there were only two schools of the kind recommended in the whole country. These were the School of Mechanic Arts in the Massachusetts Institute of Technology in Boston and the St. Louis Manual Training School connected with the Washington University in that city. Neither of these schools was a public school. The tuition in the former was $150 a year, and in the latter about half as much. The former has ceased to receive pupils from outside the Institute of Technology; that is, has ceased to be a school at all, and is now simply a department of the Institute, being used now exclusively for shop instruction of students in mechanical engineering. The latter has been, and still is, the model for similar schools in various parts of the country. The suggestion of a public high school devoted to manual training, or instruction in the mechanic arts, was novel in 1883; but is no longer so, since such schools have been established in Baltimore, Philadelphia, Cleveland, Toledo, and other cities; while the public high schools of many other places * have taken on manual training as a new branch of study. Meanwhile, endowed or private schools planned on the St. Louis model have been multiplied; the most conspicuous example being the Chicago Manual Training School.

ADVANTAGES OF INSTRUCTION IN "MANUAL TRAINING" RECITED.

The body of experience, therefore, to which appeal may be made in illustrating the advantages of manual training as a branch of public instruction, is already considerable, and it is rapidly growing. My study of this experience gives me confidence in the following conclusions:

1. That a three or four years' course of study, consisting of selected and graded shopwork two-fifths of the time daily, drawing one-fifth, and appropriate book-work two-fifths, results in a high degree of mechanical intelligence, a good degree of general mechanical skill, and a well-marked development in the power of independent thinking.

2. That such instruction takes a strong hold on the minds of a large class of boys who are either not so well reached or not reached at all by the subjects and methods of teaching current in the older high schools.

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* Between forty and fifty in all.

3. That such instruction draws some pupils away from the older high schools, but more from a class of boys who have not, as matters have stood heretofore, become pupils of the older high schools at all.

4. That such instruction is very keenly relished and appreciated by boys; who usually like no studies so well as those which have an obviously direct bearing on their future occupations, and delight most of all in exercises that bring their executive powers into productive activity.

5. That up to a certain point such instruction is a substitute for apprenticeship, now gone out of use, and, so far as it is a substitute, is vastly better than apprenticeship ever was in its best days.

6. That such instruction forms an excellent—and no doubt ere long to be considered indispensable—part of the preparation of students for schools of science, technology, or industrial art. Indeed, it is to be remembered that the mechanic art school, as we now know it, originated in a purpose to give such preparation to students of mechanical engineering.

7. That such instruction is very popular, apparently because it is meeting a widely felt want.

8. That such instruction—particularly the mechanic arts part of it—can be effectively and economically given to classes in a school.

9. That a school organized for giving such instruction is entirely convenient and manageable as a part of the public-school system in a large city.

10. The cost of such a school—building, equipment, and running expenses—is quite in keeping with the cost of any other high school. In renewing my recommendation at this time, I wish to propose for the new school what seems to me the most appropriate because the most truly descriptive name, *The Mechanic Arts High School.*

WHY CALLED A "HIGH SCHOOL."

It should be called a *high* school to mark its place in the public-school system and its relation to the grammar school. Its pupils will usually come from the grammar schools, having finished their course in them at the age of about fourteen years. Its course of instruction, partly in books and partly in the mechanic arts and in drawing, would keep its pupils on a level with boys in other high schools during three or four years. Its pupils after graduation would either pass to higher institutions, as the boys from classical high schools usually do, or into active life, with most of the graduates of other high schools. But in their case the higher institutions would be schools of science or technology rather than classical colleges, and the active life would be led more in the industrial than in the professional walks.

The new school should be called a *mechanic arts* school, in order to mark its special aim and the characteristic feature of its course of instruction.

Its aim, like that of any other high school, is both general and special. In general aim all high schools are much alike. They deal with knowledge as science, rather than with knowledge in its elements; they recognize that their pupils are at the age when the reasoning powers are developing the most rapidly: they give the beginnings of a liberal culture, for their instruction rises to the region of general principles, and furnishes the mind with some effective equipment for independent thought and action. Limited and incomplete the liberal culture given by the high school may indeed be, yet, so far as it goes, it may rightly be described as liberal, if only the school be true to its general aim.

DIFFERENT KINDS OF "HIGH SCHOOLS" DEFINED.

But high schools have their special aims, which are determined by various considerations of convenience or utility. These special aims are what characterize the different species of high schools. They determine in large measure the subjects to be taught and the manner of teaching them. Thus it happens that all high schools shape their courses of study *largely* with reference to the probable future occupations of their pupils. The classical high school, while pursuing its general aim of liberal culture, yet prescribes studies for its pupils with particular reference to their probable future occupations in the so-called learned professions. Likewise, the English high school, holding to the same general aim of liberal culture, chooses the particular subjects for its course of instruction with an eye to the wants of the many of its pupils whose pursuits in after life are probably to be commercial. Just so will the mechanic arts high school impart a culture as truly liberal as that given by either of the others; but in so doing will select studies and exercises with the fact in view that most of its pupils will be looking forward to occupations in which an experimental knowledge of the leading mechanic arts will be either highly serviceable or absolutely indispensable. So much in justification of the name *mechanic arts high school.*

One further remark should be made to guard against the supposition that the mechanic arts high school teaches particular trades. It is not a *trade* school. And yet a good mechanic arts high school helps boys a long way on towards many trades. It deals with the leading principles involved in a great variety of mechanical processes; it develops general mechanical skill, by bringing mind and hand into ready and accurate coöperation; but it does not undertake to make its pupils finished artisans in any one trade. Professor Runkle has pointed out that the mechanic arts are few, but the trades in which these arts are applied are many. Hence the mechanic arts, and not the trades, are proper subjects for school instruction. The former involve principles; the latter merely the details of application. Hence also the superiority of a mechanic arts school to ordinary apprenticeship as a means of preparation for a trade.

THE PRESENT CITY CLASSES INADEQUATE.

With regard to the existing schools of carpentry in the basement of the Latin school building and in North Bennet street, it should be said that they were organized temporarily as experiments on a small scale. From them much has been learned, but they have not solved the whole question. Far from it. Their entire course in shopwork covers but a small fraction—one-fifteenth—of the shopwork of a mechanic arts high school with a three-years course. Even in wood-work alone these schools cover about one-fifth of the course offered by the proposed school. Whatever these two experiments in manual training may have demonstrated in respect to the permanent introduction of such training into the grammar schools—a subject which I wish to reserve for discussion at some future time—they are not and could not be a satisfactory answer to the demand for a mechanical arts high school.

On the 14th of February, 1888, the School Committee received a communication from the City Council, conveying the request that the School Committee would "consider and report on the expediency of establishing a system of manual training in connection with the public schools of the city." I would respectfully urge that in response to this request the School Committee declare it expedient, as the best beginning in the establishment of a system of manual training, that one thoroughly equipped mechanic arts high school be established as soon as the money it would cost can be appropriated.

In the autumn of the same year the Annual Report of the Committee on Manual Training Schools with an Appendix giving Superintendent Seaver's plan in detail of the proposed school, was issued.* The report proper by the Committee, briefly sums up the reasons why such a school with a three-years course should be established; and recommends the passage of an order by the City Government to establish it and to erect a suitable building. In this report the receipt of a communication from the Massachusetts Institute of Technology in June, 1888, was acknowledged. This announced the closing of the High School of Mechanic Arts in connection with that institution, and urged that the Committee introduce in the City High Schools such training as had been there given. In Mr. Seaver's preliminary report, which fills some 12 pages, he gives a brief sketch of such of the Manual Training Schools as he has visited. He says:

To the Committee on Manual Training:

In obedience to your instructions I have prepared, and now have the honor to submit, a plan, hereto appended, for a mechanic arts high school, otherwise known as a manual training school, to be established by the city of Boston, if the School Committee and the City Council should see fit so to do. In the preparation of this plan I have drawn freely upon the experience of other schools, and more especially upon the experience of those I was commissioned to visit and inspect in St. Louis, Chicago, Toledo, Cleveland, Baltimore, and Philadelphia. The results of my observation in these schools are, for the most part, embodied in the plan now submitted. Still, a preliminary description of the schools themselves may be not without interest, and will be useful as throwing light on the details that are to follow.

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*School Document No. 15—1889. Annual Report of the Committee on Manual Training Schools, 1889. Boston: Rockwell and Churchill, City Printers, No. 39 Arch street, 1889; Pp. 46.

As all these schools are described in detail in the present Report only the following passages are taken:

AESTHETIC DEVELOPMENT OF THE TRAINING IN THE PHILADELPHIA SCHOOL.

> The Philadelphia school has a course of shop-work that is distinguished from others by two prominent features. The first is the distinct emphasis placed on the æsthetic side of the work. Free-hand drawing, clay modeling, and wood-carving are all coördinated with, and intimately related to, the successive stages of the shop-work. The ornamental work in wrought iron is worthy of special praise, not so much in point of workmanship, though that is good, but particularly because of the systematic art-instruction it illustrates. The second prominent feature appears in the arrangement of shop-work. A part of the iron work is placed in the first year, parallel to the joinery. The exercises are so arranged in many cases that the same idea may be worked out first in soft material (cutting wood), and then in hard material (chipping and filing iron); or again by shaping from the outside soft material (clay), and then harder material (lead or hot iron). This apparently logical arrangement is quite attractive. The same idea I found quite well carried out in the School of Manual Training in Girard College, which I visited for the second time while in Philadelphia.

It will be observed that the attention thus called to the fact that the æsthetic training of the pupils is cared for in the Philadelphia school alone, corroborates the fear, elsewhere expressed in the present volume of this Report, that such artistic training was entirely neglected in the manual training schools, and, not only in the manual training schools proper, where there may be some seeming propriety in confining the pupils to technical drawing for mechanic uses, but that it was similarly ignored by many of the advocates for the general introduction of some forms of manual training in all schools. It is this neglect of any definite endeavor and training to awaken and direct the innate love of beauty, latent in every human being, against which the advocates of industrial-art drawing earnestly protest. The importance recently given to the industrial idea in elementary education has seriously deteriorated the æsthetic side of that education, and, it is contended on the part of the followers of Walter Smith, entirely needlessly; because both sides of this education may and should be developed "*pari passu.*" The results attained in the Philadelphia school show that such neglect is needless, even in the manual training school proper, where, if anywhere, it would seem possible to justify it. Superintendent MacAlister was too well grounded in the principles of industrial-art education; too enthusiastic a believer in the educational gospel proclaimed by Walter Smith, to be unmindful of this essential element in education.

Referring to the name proposed by himself for this class of high schools—a name, by the way, which has the obvious advantage of unmistakably defining the kind of school designated, which the present appellation fails to do, Mr. Seaver says:

> In closing this report I wish to make one remark about the name to be given to the proposed school. In the foregoing descriptions, I have used the name by which all the schools visited are designated, "the manual training school." The name has obtained wide, almost universal currency during the last eight or nine years. I have elsewhere given my reasons for preferring a more truly descriptive name, "the mechanic arts high school;" and this name has been used by me in the preparation of the following plan. But now the feeling comes upon me that, in view of the wide currency the other name has already obtained, it might justly be deemed pedantic to persist in the use of a name which, up to the present time, has not been affixed to any school of the kind denoted. I wished, therefore, to leave the question of name an open one, still believing in the validity of the reasons I have adduced in favor of the truly descriptive name, the mechanic arts high school, but ready to bow to usage, the arbiter in all questions of language, if it should be thought best to adopt the other name.
>
> Respectfully submitted,
>
> EDWIN P. SEAVER.

The Appendix to this report fills twenty-three pages of the pamphlet; of these, the six opening pages, here quoted, comprise a general view of the training to be given in the proposed school. The remaining seventeen pages contain a statement of courses of study. These last are not quoted as they are substantially such as are given in similar schools as described elsewhere in this Report.

A PLAN FOR A MECHANIC ARTS HIGH SCHOOL IN THE CITY OF BOSTON.

The grade of the proposed school and its relations to existing public schools are best marked by naming it a *high* school, while the words *mechanic arts* indicate the characteristic feature of its course of study. The curriculum of this school like that of the other high schools, should begin when that of the grammar school ends. It should be three years long. The requirements for admission should be a grammar-school diploma or the equivalent examination, age not less than thirteen, and a good character.

The school time, twenty-five hours a week, should be shared by shop-work, book-work, and drawing in about the proportion of ten hours to each of the two former and five hours to the last. But if it should be thought best to introduce military drill into the curriculum of this school,—and there are good reasons to be urged for doing so,—the needed time could be taken from the book-work and the drawing equally. Then the distribution of time would be as follows:

	Hours a week.
Shop-work	10
Book-work	9
Drawing	4
Military drill	2
Total	25

Before speaking of the shop-work in detail, it may be well to dispose of the other branches of the school-work in a few words.

WHAT STUDIES SHOULD BE TAUGHT.

The book-work should be in English language, in mathematics, and in science; but a part or the whole of the science could be replaced by a foreign language if circumstances made it desirable for any considerable number of boys to make such a substitution. This might well be the case with boys preparing to enter some higher institution of learning, as, for example, the Massachusetts Institute of Technology.

In English language, the chief effort should be in the direction of training to clear and correct use of language in both oral and written expression. Literature and history would not be directly the subjects of study in this department, but they would supply the material to be worked upon; and thus incidentally the pupils would become acquainted with a few works of the great writers.

The mathematics should include elementary algebra, plane and solid geometry, descriptive geometry, and plane trigonometry. A thorough acquaintance with these branches has been found essential to the best success, both in drawing and in mechanical construction.

The science should be physics and chemistry. The method of teaching both these branches should be that known as the laboratory method. If circumstances make this method impracticable,—as is the case now in some high schools,—the time would be better spent in the study of a foreign language. The day for mere book-work and lecture-notes in science has gone by. Some of the apparatus used in the laboratories may be made in the shops by the boys; but not all. There is an important limit to be observed in this matter. Boys should not be set to making their own chemical or physical apparatus unless the knowledge to be gained from such making be at least as valuable as the knowledge to be gained from any other kind of shop-work that could fill the same time. To set boys to making things for no other reason than to save money in the running expenses of the school is wrong; for it is to sacrifice the boys to the school, whereas the school exists only for the benefit of the boys.

DRAWING TO BE TAUGHT IN ITS RELATIONS TO THE SHOP-WORK.

The drawing should be carried on with constant reference to the shop-work, which it is designed to assist, and from which in turn it will receive assistance. As educational agencies, drawing and construction belong together as two parts of one whole. Neither is fully efficacious without the other. Like the two blades of a pair of scissors, each requires the aid of the other to do its own work. The drawing teacher will, therefore, keep the shop-work constantly in view, co-operating with it, and using it as the chief source from which to take illustrations. The shop teacher, on his side will see that every piece of work, however simple, be executed from drawings made by the pupil. Thus the whole work of the drawing-rooms and shops becomes one course of practice in the expression of ideas, through drawing and construction. The drawing will be chiefly of the kind known as mechanical drawing; but the aesthetic side of the work should be provided for by adding a reasonable amount of free-hand drawing.

TECHNICAL INSTRUCTION IN USE OF TOOLS. WOOD-WORK.

The shop-work will be described first in outline and then in more detail.

The first year's shop-work should consist of carpentry and wood-turning chiefly; but, for the aesthetic side of the work, there should also be a considerable number of lessons in wood-carving. The year's work should be drawn up in a fully detailed series of lessons or exercises, which should be required of all pupils alike, the whole class beginning each new exercise in the series simultaneously. Then there should be drawn up a parallel series of supplementary exercises, to be given, as occasion may require, to those quicker pupils who complete the regular exercises in less than the allowed time.

In the shop-work of the second year the wood-work is continued and becomes pattern-making. This is accompanied and followed by a brief course in moulding and casting. The material used for casting may be either plaster or soft metal. The latter is easily managed, and may be melted over and over again, thus avoiding waste. The same may be said of brass. Although there appears to have been little experience with the casting and finishing of brass thus far in the schools, there is good reason for believing that experiments in this direction would prove very satisfactory.

WORK IN METALS.

Iron cannot advantageously be used, for it would necessitate the expense and the trouble of a cupola. Besides, the process of iron-casting, to be of much educational value, would involve more knowledge of metallurgy than could well be contemplated in a school of the character now proposed.

Whatever iron-castings might be needed for the third year's work could best be procured at a commercial foundry in the usual way; that is to say, the boys would make the patterns of the castings they needed, send them to the foundry, and receive the castings in due time. It would, doubtless, be found practicable occasionally to arrange a visit to the foundry by a class when castings were to be made from their patterns, or at other times.

After the pattern-making, moulding, and casting, which altogether should occupy twelve or thirteen weeks in the early part of the second year, should come the forging, which will occupy the remaining two-thirds of the year. The forging begins with simple exercises in bending, drawing out, and upsetting; then follows welding, with exercises of increasing difficulty requiring more and more knowledge and skill; and the course concludes with each boy's forging and tempering a set of tools which he will use next year in the machine-shop.

Supplementary exercises in forging should be provided for the quicker boys. There is an endless variety of ornamental wrought-iron work that may be suggested for supplementary exercises, although some ornamental work should have a place in the required exercises. Thus the æsthetic side of the work would receive due attention. Ornamental wrought-iron work is now so much in vogue that the boys would find it very interesting, both in designing and in working out their designs. Their designs should first be made on paper and submitted to the teacher for criticism.

Not until the designs have been approved does work at the forge begin. By this double process of making designs and working them out in material, is the great lesson learned that mere prettiness, or beauty even, in a design is not necessarily an element of value. If a design be unworkable in the material intended, it is worthless.

The shop-work of the third year should be almost wholly in the machine-shop, consisting of exercises in chipping and filing and of exercises at the machines.

SOME SPECIAL MECHANICAL PROBLEM UNDERTAKEN AND A COMPLETE WORK EXECUTED AT END OF THIRD YEAR.

After the prescribed exercises of the year have been done, each pupil should be ready to undertake, either alone or in partnership with one or more other pupils, some project, or complete piece of mechanical work, which may serve as the crowning exercise of the whole instruction in mechanic arts. These projects correspond to the graduation theses of academic courses of study.

A project is begun in the drawing-room, where the plans and shop-drawings are prepared from given specifications. Then the patterns are made in the wood-working shops. The iron castings are best obtained at a commercial foundry, for reasons already explained. The pupils take the castings to the machine-shop, where they do the fitting and finishing, and where the whole project is put together and tested. In this way the boys, in their third year, are taken over the whole ground of their previous instruction in mechanic arts, and their knowledge is unified and solidified. The projects usually undertaken by two or more boys in partnership are steam-engines, dynamos, speed-lathes, steam-pumps, and other such machines. Some of the schools now possess machines thus constructed by pupils which have been doing good work for some years. At Baltimore is a steam-engine, made by the pupils of the school, which furnishes all the power used in the shops. At Chicago is a smaller engine, made in the school by pupils, which is used for driving some of the machinery of the shops. In the Naval School at Annapolis, where instruction in the mechanic arts is given to the cadets, there are good steam-engines of various patterns, all the work of past graduating classes. At Cleveland is a 40-light dynamo, made by the boys, which will be used to light the machine-shop.

Machines like these are undertaken only by several boys working together; for single boys the projects must be simpler and less time-consuming. As has been stated already, the boys' work on these projects begins with the preparation of drawings from *given* specifications. To originate designs of machinery, or to make specifications in accordance with scientific principles, would be too high a task for the boys to undertake at this stage of advancement. They must therefore take the designs and specifications of their projects from their teacher, or from some other competent authority. These having been obtained, all the rest of the work, save the casting, is the boys' own work, done under the general advice and guidance of the teachers.

SOME CLASSES OF COMPLETED WORK MAY BE UNDERTAKEN EACH YEAR.

Projects are not necessarily confined to the third year. They may be advantageously introduced near the end of the carpentry course in the first year, or near the end of the whole wood-working course in the second year, or near the end of the forging course in the same year. These would be especially desirable for those boys who had finished the prescribed exercises in an excellent manner and in less than the allowed time. Boys of this sort there will always be; and the highest success of the school will depend on keeping such boys interested and busy. Pieces in cabinet-making ornamented with wood-carving, and pieces in ornamental wrought-iron work would be quite within the boys' power to execute satisfactorily; and such pieces would serve well, not only to display acquired skill in workmanship, but also to bring into play the artistic feeling. As to the material used in any of the projects, if its cost should be worth considering, the boys should be expected to provide it or pay for it, in case they desire to possess the completed article. All projects, however, should be held by the school so long as they may be needed for exhibition.

PROFESSOR C. M. WOODWARD'S BOOK ON THE MANUAL TRAINING SCHOOL RECOMMENDED.

Such in outline is the shop-work which experience has shown to be practicable and useful, resulting in a good degree of general mechanical skill and a high degree of mechanical intelligence. The main feature of this shop-work course may be regarded as permanent, although the details may be expected to change from year to year as taste or convenience may suggest. Nevertheless, at the outset the proposed school will need a fully detailed course of shop-work. showing all the particular exercises, both required and supplementary, together with suggestions of suitable projects for the end of the whole course and of other periods; and such a detailed course would be presented here in this report, with wood cuts to illustrate it, were it not, fortunately, so easy to refer to a recently published book* containing all the needed descriptions and illustrations. The exercises in carpentry. wood-turning, pattern-making, wood-carving, forging, chipping, filing, shaping, and finishing, fully described and pictured in this book, as executed in the St. Louis Manual Training School, leave little to be desired; and these may be adopted with all the more confidence since the other schools have adopted substantially the same. For exercises in moulding and casting, reference may be made to the courses of some other schools, especially to that of the Massachusetts Institute of Technology. Also there are good examples of ornamental wrought-iron work to be taken from the schools at Chicago and Philadelphia. From these sources of information is derived the following brief statement of the contents of the various courses of shop-work that should have place in the proposed school.

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*"The Manual Training School," by C. M. Woodward. Boston: 1887.

It will be seen that Mr. Seaver, mentions the making of steam-engines by Manual Training School pupils. As he explains the facts there is no occasion for any misapprehension; but, as such engines have sometimes been paraded as the *sole work of the pupils* in the Public Manual Training School, and the impression given, if not intentionally—that these young school boys were then, by reason of what they had learned in the school, perfectly competent to go out and build steam-engines, the erroneous impression was calculated to effect ultimate injury to the reputation of the school and "to make the judicious grieve." What, if such were the fact, becomes of the argument so often urged that the Manual Training School is not a trade school? Is not the designing and building of steam-engines a trade?

Such extravagant claims will be sure to react and the school whose training is so unduly exaggerated to the popular mind, will be, in turn, unduly condemned when the fact becomes patent to all that such works, as Mr. Seaver states, "would be too high a task for the boys to undertake at this stage of advancement."

Such a school as Superintendent Seaver pictures, should have as its principal, an experienced teacher, as thoroughly equipped for his pedagogical work, as the principal of any other "High School" is expected to be; while the master of the drawing room, and the master of the shop-work, need to be equally well fitted for their several duties. The plan, however, of making the teacher of Mechanics the principal of the school, which is approved by some enthusiastic promoters of these schools, seems one sure to result in the subordination of the educational to the mechanic features of the school; and thus to divert its purpose from that of a High School to that of a mere specialty.

It is the fear of this tendency which has prejudiced many experienced educators against such schools.

ANNUAL REPORT FOR 1889 BY SUPERINTENDENT MACALISTER, OF PHILADELPHIA.

Unusual interest attaches to the report for the year 1889, of Superintendent MacAlister, of Philadelphia, just at hand, since it is to be his final report as Superintendent; he having on the eleventh of November, 1890, shortly before this report was published, submitted to the Board of Education his resignation of the office of Superintendent, to take effect January 5th, 1891.

In the report for 1888, Mr. MacAlister, recited at length the history of his administration; copious extracts from which report, as well as from his first report, that for 1883, are given in Appendix "P" of this volume, paper VI. So that, with the following extracts from this final report, the history of this innovation in the organization of the school system of this city is begun and completed in the present volume. The administration of Superintendent MacAlister, has been carefully observed by educators; at first, with solicitude, and latterly, with great confidence and satisfaction; because it has justified, by exceptional success, the bold experiment undertaken; when President Steel, and his fellow members of the City Board of Education, ventured upon no less a revolutionary movement than the radical change of the whole system of Public School organization and methods of instruction, involved in the creation of the office of Superintendent; with all the subsequent changes that were necessarily implied, when that office was created. Hon. James MacAlister, who was called from a like position in the City of Milwaukee, was so well known as one of the advanced leaders in the educational reforms of the day, that the fact of his selection was, in itself, evidence that the Board of Education sought to bring Philadelphia, in line with her sister cities; so far, at least, as to give to this city a similar organization of its school system, and by the introduction in the schools themselves of the new studies and methods of instruction which marked the more recent advanced movement in education. This movement may be said to date, in the United States, from the year 1870, or a few years before; though its initial impulses, were given long years ago by great thinkers, and teachers; such as were Bacon, Comenius, Pestalozzi, Rousseau, and Fröbel in Europe; and, in America, Horace Mann, Henry Barnard, Agassiz, John D. Philbrick, and Walter Smith, not to mention the living leaders. To this recent awakening in America, the influence of the Centennial Exposition in 1876, had given increasing impetus; an influence naturally felt in Philadelphia itself, in many directions educationally and otherwise.

The organization of the Public School system of Philadelphia, as it was before the office of Superintendent of Public Schools was created, is succinctly told in the opening pages of Superintendent MacAlister's Report, which follows:

To the Board of Public Education, First School District of Pennsylvania:

I have the honor to submit my Annual Report for the year 1889.

STATEMENT OF PROGRESS MADE.

In my Annual Report for 1888, a pretty full presentation was made of some special features in the work of the schools, which had occupied the attention of the Board for several years previous. It is now nearly seven years since I entered upon my duties as the first Superintendent of the public schools of Philadelphia, and the time seems opportune for a general statement of the work that has been done and the progress that has been achieved. It is not intended in this place to go into an extended discussion of these changes. My only purpose is to set them down in such a way as will form a sort of conspectus of the work that has been undertaken and the results that have been obtained.

I.—THE ESTABLISHMENT OF THE SUPERINTENDENCY.

In a review of this kind, the organization of the Superintendency naturally holds the first place. It was in many ways the most important step taken since the establishment of the school system. The city of Philadelphia stood alone in having no executive officer in the administration of its school affairs. Not only in the larger centers of population, but in the smaller towns everywhere, the responsible management of the public schools had long been vested in an officer known as the Superintendent. The exceptional position of Philadelphia, in this respect, is explained by the somewhat peculiar circumstances under which the school system has grown into its present proportions. It has been very largely a process of aggregation. Originally the free schools were managed by local boards, each of them an independent body, with the ward for its jurisdiction. These boards made their own rules, appointed the teachers, and directed the instruction within their own limits. In course of time, with the growth of the city, a central board was found to be a necessity, and the Board of Controllers, afterwards transformed into the Board of Public Education, was accordingly created; but the local boards were retained, and the management of the schools was divided between the two organizations. It was inevitable that difficulties should arise from this double system of administration, and the experience of the past amply justifies the statement that the progress of the schools has been greatly retarded by the multiplication of school officers and the conflict of authority growing out of this arrangement. The duties and responsibilities which elsewhere were placed in the hands of a superintendent were discharged jointly by the central and the local boards. This was true, not only of the business affairs which properly belong to a governing board, but also of the educational work which implies the exercise of professional skill and experience. The incongruity of this condition of things gradually forced itself upon the attention of those most interested in the welfare of the schools; and a movement was set on foot to secure for Philadelphia a system of supervision similar to that which had long been established throughout the United States. It was not till after ten years of agitation and effort, however, that an appropriation was secured from Councils and a superintendent appointed, who entered upon his duties May 1, 1883.

It has seemed proper that this meager statement of the conditions out of which the superintendency of the public schools of Philadelphia came into existence should be made, as the responsibility of establishing the position devolved upon me. I think it may fairly be assumed that, taking into consideration all the circumstances of the case, the task was one surrounded with more difficulties than has ever fallen to the lot of any one occupying a like position in this country. It should be remembered that the Board of Public Education was by no means of one mind as to the desirability of creating such an office; that the local boards generally occupied a hostile attitude; that the great body of the teachers were unfavorable to the movement; and that public sentiment was indifferent on the whole question. It is no exaggeration to say that few persons, even among those connected with the schools, had any well-defined notions as to the powers and duties of a superintendent, and it was but natural that those who had heretofore exercised various duties and responsibilities properly belonging to such an officer, would not quite willingly relinquish them to other hands. To these considerations must be added the magnitude of the field that was waiting to be occupied. There were 465 schools, 105,500 pupils, 2,168 teachers, and more than 400 school officers, in a population of a million souls, to be dealt with in effecting the improvements that were impatiently expected.

It was under these circumstances that the work of supervision was begun. There were no precedents or experience on the subject existing here. Even the right of the position to exist had to be justified. No rules could properly define the superintendent's duties; the functions of the office had to be demonstrated by actual achievement. The possibilities of the work were without limit and the opportunities were undoubtedly great; but these things did not make the task less onerous. The desirability of reform in almost every direction was conceded on all sides. It was not to be expected that a body of teachers, no matter how capable and earnest could show results that were possible only under more favorable conditions. There had been as little unity in the character of the instruction and the fruits which it yielded as in the administration of the schools. The courses of stiudy had been largely shaped by laymen. Examinations, promotions, and nearly all the details of school work had been almost wholly in the same hands. The standards applied to the teacher's work were not such as to encourage sound methods or to mete out rewards to the most worthy. These statements are not made in a critical spirit, but merely as historical facts to indicate the point at which supervision began. Altogether, the undertaking was as difficult as it was novel, and called for an amount of labor and courage that made it seem to those most experienced in the profession like temerity to assume.

It is plain that the problems to be solved were neither few nor easy. The work of reform had to be thorough, but neither hasty nor revolutionary. A wise conservatism was the only policy that could be depended upon for permanent results. It is with the powers that have been conferred upon him, with the opportunities that have been opened to him, that the superintendent has labored during these years to improve and elevate the public education of Philadelphia. His endeavors have been restricted on many sides. From necessity he has abstained from meddling with the administrative machinery of the schools, notwithstanding the hindrances it has opposed to the performance of his executive duties. He has directed his efforts chiefly to revising, improving, and extending the courses of instruction, to introducing newer and better methods of teaching, to elevating the standard for the teacher's work, and to cultivating a wider interest in the public mind on behalf of the schools. The work has gone far enough to produce results that are neither indefinite nor intangible; and it is by the spirit in which this work has been carried on and the character of the results that have been obtained that the necessity and value of supervision for the schools of Philadelphia must be estimated.

II.—The Revision of the Courses of Instruction.

The work of revising the courses of instruction was begun early in 1884, with the adoption of the primary manual. This was followed in 1885 by the revised course for the secondary schools, and in 1886 by that for the grammar schools. It is needless to speak of the courses of study which were superseded by these revisions. They were for the most part programs of a certain amount of work to be accomplished. They were founded on text-books, and specified so many pages to be done in a certain time; and the one object to which the teachers' labors were directed was the examination at the end of the term. It was not possible that it could be otherwise. * * * . The changes in the methods of instruction which the schools have undergone within the past few years have been so radical that it is rather difficult to recall the manner in which the teaching was done in a very considerable number of the schools. In the lowest primary grade, a card which had the alphabet on one side and arithmetical tables on the other was the sole basis of the instruction in reading and number. In all the fundamental branches, concert recitation was the almost universal practice in the primary and secondary grades, and the same thing was more or less true of the more advanced grades. The memory was the faculty that was chiefly exercised in every branch of study; the perceptive powers of the mind, the imagination, the judgment, and the reason were neglected because they could not be made to tell in the form of averages. The effort of the pupils was directed to the memorizing of rules or the repetition of formulæ in the most important studies. The development of power in the children, of the ability to think and to do for themselves, would have been considered a waste of time and energy on the part of the teacher. These plain statements are made because it is not believed that any defense could be offered for practices that had become obsolete in nearly every part of this country. Good teachers, of course, did their work in quite a different way. The instructor who understands his business is always more or less independent of the formal requirements of a course of study; and it is needless to state that even under conditions so unfavorable, there were schools that had fallen into line with the general advance of education throughout the country, and were doing work that was appreciated by the best intelligence of the community. The general level, however, could not fail to be affected by the absence of such standards as are essential to guide and direct the teacher's work.

The new courses of instruction were a radical departure from the old in almost every particular. They were founded on principles which had found acceptance everywhere among the best educators; they set up higher and better standards of scholarship; they implied at every step knowledge and training on the part of the teachers; in one word they emancipated the schools from traditions that had too long held sway in Philadelphia, and opened wide the door for the new education which was ready to come in. * * *

No impartial observer of the public school movement in Philadelphia can have failed to notice the vast improvement that has taken place since the revised courses went into operation. The larger number of the teachers were found ready for any advance that might be made, and eagerly laid hold of the principles and practice of teaching which these new courses presented to them. Wherever the new methods have been intelligently applied, the whole character of the school had been transformed. The teachers themselves stand in a different attitude to their work, and respect the things which count for intellectual development and power. The children feel the vitalizing influence of the teaching, and exhibit that pleasure in the exercise of their minds, which is the best test of the instructor's work. Speaking with all moderation, it may be said that there is not a single branch of study which does not show a marked advance while in some an entire revolution has been effected.

III.—The Establishment of Supervising Principals.

Next only in importance to the revision of the courses of study stands the introduction of supervising principals. To understand what has been accomplished by this plan of school management, it is necessary to refer to the arrangements under which the schools were formerly conducted. The principal of the school was simply the teacher of the highest grade, charged with such oversight of the instruction and discipline of the school as he found time to attend to. In a school building there might be a half dozen schools, each with its own principal, and all of them entirely disconnected. The unsatisfactoriness of such a system had become so apparent before the appointment of a superintendent that in two or three schools the principals had been relieved of teaching duty to permit them to devote their whole time to the general direction of the schools. Very soon after my appointment, I directed the attention of the Board to the necessity for a better system of administration for the internal affairs of the schools, and recommended the establishment of supervising principals. * * * There are now sixty supervising principals in charge of school buildings. A report recently made by Mr. Meehan, a member of Common Council, and also a member of the local board of the Twenty-second Section, after a careful examination of the working of the system, bears the strongest testimony as to its value in improving the whole character of the schools to which it has been extended. * * * .

IV.—Establishment of Uniform and Systematic Examinations.

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V.—Examination of Teachers.

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VI.—Establishment of the Manual Training School.

The rapid strides which have taken place in every department of education, not only in this country but throughout the civilized world during the past twenty-five years, have raised many grave questions as to what modifications are needed in the scope and purpose of the instruction given in the schools. The traditional ideas of education have been shaken to their very foundations, and features which would have been thought revolutionary in the college as well as in the elementary school, have found a secure lodgment in the curricula of both. The general tendency has been away from those forms of purely literary training which owe their origin to that important movement known as the Renaissance. New arts and sciences have arisen, changes in the economic and social relations of men have taken place, and the type of education which the world needs to-day is very different from that which prevailed throughout Europe three centuries ago. The universal demand is that the school shall give a more general training, and put its graduates more directly in relation to the actual needs of our civilization. What is known, for want of a better term, as manual training is one of the phases which the new education has assumed. It has given rise to much discussion, but in one form or another it is gradually finding its way into the schools of the United States and Europe. The Manual Training School, established in 1885, was the first effort made in Philadelphia in this direction. The purpose of this school was, of course, much misunderstood; but the public interest aroused at the time has been so actively maintained that there is now a very intelligent comprehension of what it stands for and what it undertakes to do. In connection with a good English and Scientific education it furnishes a thorough course in drawing and in the nature and application of the fundamental tools. It is in no sense a trade school; but, recognizing the actual needs of society, it seeks to develop and train every power and faculty of a human being in such harmonious relations as shall produce a broader culture, and, at the same time, a more practical ability to meet the demands which the world makes upon the great majority of men and women. I think it may be said that the value of manual training, as exemplified in this school, is now fully recognized in Philadelphia. In every sense the school has been an unqualified success, and it enjoys to-day probably as large a share of the public confidence as any department of the public school system. Two classes have been graduated, and last June a considerable number of boys were turned away from lack of accommodations. The original intention was to establish four or five schools of this kind in such quarters of the city as would best accommodate the public needs. The demand for a second school can no longer be resisted, and provision should be made for it at the earliest possible day.* I believe that Philadelphia has acted wisely in recognizing this new form of education. When it shall have been fully developed, the benefits derived by the community will, I am sure, amply justify the wisdom and liberality which permitted the first step to be taken.

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*Since this Report was written a second Manual Training School has been opened in the eastern part of the city.

VII.—THE INTRODUCTION OF SEWING AND COOKERY INTO THE GIRLS' SCHOOLS.

The same motive which prompted the establishment of the Manual Training School led to the consideration of what could be done for the girls. After careful deliberation, it was decided to make a beginning with sewing. The arguments for making sewing a regular study in the girl's schools were fully set forth in my last report and need not be repeated here. In the spring of 1884, a half dozen teachers were appointed to test the value of this form of instruction and the possibility of incorporating it into the regular school course. Within a few months, the results obtained were so satisfactory that a full staff of teachers was appointed, and work was begun in every grade of the secondary and grammar schools. The opposition to the introduction of sewing was even more pronounced than in the case of the Manual Training School. Within a year or two, however, the advantages of the instruction had become so manifest that a most favorable reaction took place, and the public satisfaction may now be said to be almost universal.

From sewing to cookery was but a single step. The public interest in this form of educational training had become so active that a demand for cookery classes soon came to the surface. Notwithstanding the experience of other cities, where instruction in cookery had been successfully tried and adopted, there was less willingness to meet this demand than had been the case with sewing. A beginning was made in the Normal School* in 1887, and the experiment proved so satisfactory that in the following year a grammar-school class was started. This also yielded results so acceptable that in the autumn of 1889 the first permanent center for grammar-school classes was opened at the Shippen School-building, in the Tenth Section. At present there are three School-kitchens, two in the Normal School and one at the place last named. The lack of money has interfered with the further extension of the work; but public sentiment in favor of the movement is so rapidly ripening that application will no doubt be made to extend the instruction throughout the girls' grammar schools. Perhaps more might be said of the educational value of cookery than of sewing. It involves scientific training of great value, aside from its practical applications, and it has social and economic bearings that are beginning to receive serious attention. The interest manifested by the girls and the larger number of the teachers shows how highly it is appreciated. When fully established, the sewing and cookery instruction will give to our girls' schools a more comprehensive course of training than is afforded in any other city in the country.

VIII.—ESTABLISHMENT OF THE PUBLIC KINDERGARTENS.

In my Report for 1888, a sketch was given of the circumstances under which the kindergartens had come into existence under the fostering care of the Sub-Primary School Society of Philadelphia; a pretty full statement was also made of the arguments in favor of their establishment in the public school system. Councils having appropriated a sufficient sum for the purpose, this step was taken on the first day of January, 1877. Since then the kindergartens have been an integral part of the public education of the city. It is needless to repeat the claims which the little children have upon the educational authorities. The kindergarten is now recognized, not only as the most admirable means of beginning the education of a human being, but as one of the most important auxiliaries in the social economy of every community. I am convinced that Councils and the Board of Education acted wisely in extending the benefits of the public schools below the primary grades. The public school system, as now constituted, begins with the kindergarten, taking the child at four years of age, and, carrying it through the primary and grammar grades, finishes with a secondary education in the Central High, Normal, or Manual Training School, either of which fits the young men or women who have received its advantages for almost any position in life which they may be called upon to occupy. The more fully the methods and ends of education are understood the more apparent will become the necessity for making a right beginning. The kindergarten is the broad foundation upon which all future growth and attainment should be based. It is only a question of time when this fact will be universally recognized, and the example of Philadelphia followed by other cities. Limited appropriations have prevented as rapid an increase in the number of kindergartens as is desirable, but they are slowly taking root as an essential part of the system of public education, and their claims will no doubt be fully recognized and provided for. There are now forty centers with sixty kindergarteners.

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*The Normal School, as at present constituted, includes both academic and professional instruction.

IX.—REVISION OF THE COURSES OF INSTRUCTION IN THE CENTRAL HIGH SCHOOL AND GIRLS' NORMAL SCHOOL.

Fully recognizing the pressing claims of elementary education, the larger part of my time and labor has been given to the lower departments of the school system. In addition, however, to the establishment of the Manual Training School, much careful consideration has been devoted to the Boys' Central High School and the Girls' Normal School. It must be admitted that these schools have not kept pace with the rapid progress which secondary education has been making the last twenty-five years. They have clung tenaciously to traditions and long-established usages, and have shown an unwillingness to adapt themselves to the changes that have been going on in lower schools with which they are connected, and from which their supply of pupils must be drawn. This is greatly to be regretted for many reasons, but chiefly because it has tended to keep alive the old controversy as to whether high schools should find a place in the public education of the city. It is not worth while to argue this question at this late day. To use the words of the distinguished educationist, Professor Laurie, "It seems to me that public education may almost be regarded as a failure and a waste of money and power if we can not secure for a fair proportion of the pupils what may be called advanced elementary instruction." But there can be no doubt that these schools would stand better with the people if they manifested a more progressive spirit and a stronger desire to meet the intelligent demands which the public are from time to time making upon them. The high school, as the crowning feature of a city system of education, ought to exercise a stimulating influence upon all its departments. It should be a leader in every forward movement, and its influence should be felt in elevating and refining the intellectual tone to the community. A larger view of the functions of our high schools is needed quite as much as the modification of their courses of instruction and methods of teaching.

There has been, of course, more or less discussion of these questions while changes have been going forward in the other departments. Two years ago the course of study in the Central High School was, after a good deal of delay, taken vigorously in hand, and almost wholly reconstructed. * * * It was a great gain to get rid of the traditions that had too long fettered the school; to get out of the ruts in which it had been content to move. The new course has given the school a fresh start and drawn public attention to the need of a larger and more suitable building, without which it can not much longer keep up with the growth and advancement of the other departments of the school system. It should be accepted for the good things which it contains and the promise of larger usefulness it holds forth. Only let us not regard it as a finality. The right attitude to keep is a readiness to make whatever changes experience, the re-adjustment of the lower schools, and the public needs may from time to time render necessary.

The necessity for some radical changes in the Normal School is now realized, I believe, by a large proportion of the members of the Board of Education. * * *

It is proper to state that some important modifications of the course of instruction resulted from the deliberations of the sub-committee. Psychology, the History of Education, and the Philosophy and Practice of the Kindergarten were made required studies in the normal department. Meanwhile several important features had been engrafted upon the school. Sewing was introduced a number of years ago, and, as has already been said, cooking classes were established in 1887. All this may seem to indicate a good deal of reconstruction and amendment; but the general organization and working of the school stands where it did before these changes were made. The re-arrangement of the academic branches which appears in the accepted curriculum was more nominal than real. No vital changes were effected in the internal arrangements of the school, and the multiplicity of studies and the objectionable sub-divison of work among the teachers have gone on very nearly as they did before. What is needed to bring the school up to that high standard which the public has a right to insist upon is its complete reconstruction upon principles quite different from those upon which it was originally founded. The ideal of public education in Philadelphia to-day is very different from what it was fifty years ago, and the school must be made to serve other purposes besides the training of a supply of teachers for the schools. That is one of its most important functions, but it is not the only one. Every girl who has the ability and the will to add to the elementary education she gets in the grammar school has a right to the more generous culture which a high school offers. A great city has need of cultivated wives and mothers as well as of teachers trained to render professional service. The course of study in a high school for girls should be broad enough to prepare women for every relation in life. The Girls' Normal School, as at present constituted, does not serve that end; and nothing short of the radical changes in its organization and the entire revision of its curriculum which have been suggested above, will enable the school to take that high place which it ought to hold among the educational institutions of the city.

X.—THE PEDAGOGICAL LIBRARY IN THE SUPERINTENDENT'S OFFICE.

On entering upon the duties of superintendent, it seemed to me desirable to have at command the best authorities on the history, science and art of education, alike for the use of those immediately connected with the superintendent's office, the teachers, and other persons interested in the public school system of the city. The liberality of the Board enabled me to begin the realization of this desire at an early day. Starting with absolutely nothing, a collection of books has been gradually got together, until it may be said that the Board of Education now possesses a special library, perhaps unequalled in any other city of this country. The gathering of these books has been to me a labor of love, occupying the spare moments of my time, but I feel that it has been an important work, and will be more and more appreciated as higher views and a wider knowledge of education obtains among the teachers and the public. * * *

XI.—GENERAL REMARKS.

The above outline of the work which has been undertaken, and the results that have been obtained in the schools since the establishment of the superintendency has been sketched to enable the Board to see what was the point of departure and how far the schools have traveled in the direction of improvement. Unfortunately only the external marks of such a movement can be brought into view. It would be easy to state in figures the relative value of the old and the new methods of instruction, and I am sure that those who found their judgment upon "averages" would find much satisfaction in applying that mode of testing the work of teachers and pupils. But no one who knows what education really means will be satisfied with such a standard. The objects that are set before the teachers and the spirit in which they are called upon to do their work are the only proper criteria of a course of instruction. These things must be sought in the school-room; and the extent to which they are successful is to be measured by the growth and development of the pupil's intelligence—that is, his ability to think and to apply his knowledge to the realities of life. The courses and methods that are now authorized in the schools demand that teachers shall be satisfied with nothing less than this; and it lies within the power of the Board of Education to provide an adequate supply of teachers capable of realizing a standard that is neither too high nor too exacting for daily use.

It must not be inferred from anything that has been said that any of the courses of instruction now in force are to be regarded as a finality. No scheme of instruction is ever finished. It is the "machine" teacher who clamors for limits fixed for all time. No matter with what skill and care a course may be devised the necessity for revision will soon become apparent. Better methods become elaborated; unexpected adjustments are called for; and the superintendent who understands his duty will be the first to welcome the former and to provide for the latter. These, however, are more matters of internal arrangement than of external form, and do not necessitate any serious reconstruction of the established code. Ever since the revised courses went into operation changes of this kind have been going on, and many valuable features have been added without disturbing in any way the regularity and continuity of the work. But some modifications in the courses as originally adopted are needed to adapt them to the advancement which the schools have since made. These changes have occupied my attention during the last year and will be presented to the Board at an early day. The fundamental principles on which the instruction now given is based remain intact, but the experience gained in applying them will prove invaluable in making corrections that cannot fail to prove advantageous to the schools.

In concluding these remarks I desire to impress upon the Board that while so much progress has been made a great deal still remains to be accomplished. The vantage-ground that has been gained only renders more clearly visible the fields that lie beyond and remain to be cultivated. I feel it to be my duty to remind every one connected with the public education of the city that it is by going forward on the lines that have been opened that the schools are to be elevated and improved, and better fitted to perform the function in the social, political, and economic life of the people, for which they were established and are maintained. It has been my privilege, as it has been my duty, to labor for these high and worthy ends, and it has been by the extent to which they have been realized that the service which has been rendered must be judged. * * *

The Superintendent then treats at some length of "Examinations;" and follows with several pages concerning "School Accommodations and Attendance." The last section given to the subject of "Attendance" is quoted below.

It will be observed that these statistics of pupils, and of schools, are very suggestive; since they are so well classified as readily to show the proportion between attendance on the different grades and kinds of schools.

The rapid diminution of attendance as the highest grades of schools are reached; the ratio of manual training school pupils to the total number of pupils in all the schools; the relatively small number attending the cooking classes; all serve to show that, as yet, both the higher training in the schools above the grammar schools, and the technical training given in the Manual Training School, reach but a very small minority of public school children. The arguments that have been used against the opening of High Schools, the reasons urged by some of the Industrial Training advocates in opposition to the teaching of the classical languages in them so that High School pupils could be fitted for colleges and universities; would equally apply, it would seem, against the opening of special Manual Training Schools as members of a city or town system of public schools. The conclusion pointed out by these figures is that all these forms of advanced education must be defended or condemned on the same grounds; neither class, in fact, reaching more than a small minority of the pupils. The friends of the Manual Training Schools, should then be found as the allies, not the opponents, of the advocates of the classical training in High Schools. If higher training is desirable in any direction, it is in each of these, and there should be a firm alliance between all the friends of higher training in the public schools in every practicable line, if the community at large is to reap the benefit from its liberal expenditures for free public schools to which it is entitled. It is by the fact of *adding* a new province to the educational world, not by deserting any lands already occupied and improved, that the advocates of Industrial Education in public schools may hope to win the lasting gratitude of the community.

The following general synopsis presents the statistics of the schools at the close of the year in convenient form:

GENERAL SYNOPSIS.

Total number of schools	457	*
Total number of teachers	2,485	
Total number of pupils	113,736	

	No. of Schools.	No. of Teachers.	No. of Pupils.
Kindergartens	37	49	2,330
Primary Schools	172	737	35,541
Secondary Schools	95	437	19,413
Grammar Schools	53	410	16,995
Combined and Consolidated	100	852	39,457
Central High School	1	19	561
Girls' High and Normal School	1	37	1,522
Manual Training School	1	14	327
School of Practice	1	8	555
Totals	461	2,563	116,701

Total number of Kindergarten pupils	2,330
Total number of Primary pupils	55,252
Total number of Secondary pupils	32,567
Total number of Grammar pupils	23,587
Total number of pupils in High, Normal, and Manual Training Schools	2,410
Total number of girls in Sewing Classes	29,599
Total number of girls in Cookery Classes (Normal School)	460
Total number of girls in Cookery Classes (Grammar)	201
Total number of boys and girls in Industrial Art School	875

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* Exclusive of Central High, Normal, Manual Training, and Practice Schools.

LECTURES TO TEACHERS.

In addition to the teachers' meetings usually held by the superintendent during the year, a course of lectures on "The History of Modern Education" was delivered by me Saturday mornings at the hall of the Normal School. As in former years, these lectures were attended by large numbers of teachers, and as the syllabus may prove serviceable in their studies and teaching it has been printed as an Appendix to this Report.

CONCLUSION.

In concluding this Report, it is a great satisfaction to be able to bear witness again to the progress that has been made in almost every department of the school system during the past year. A number of commodious school-houses have been erected, the teaching force has been considerably increased, salaries have been advanced, several improvements in school management have been effected, and the quality of the work done has been elevated all along the line. Still more important is the higher standard which teachers continue to set for themselves, and the larger measure of intelligence and devotion which they bring to the performance of their duties. The one enduring power in a system of schools is the teacher. To give the children instructors with the character, the knowledge, the training, the skill, and the enthusiasm that their high calling demands is the greatest service that the Board of Education can render to the public.

Respectfully submitted.

James MacAlister,
Superintendent Public Schools.

The syllabus of the six lectures on "Modern Education" given to the teachers on Saturdays by the Superintendent, with the appended lists of reference books to be consulted in connection with each lecture, are suggestive and valuable.

The subject titles of these lectures were:

First Lecture. The Rise of Modern Education. *Second Lecture.* Comenius. The Founder of the New Education. *Third Lecture.* The English Reformers. *Fourth Lecture.* Rousseau, the Preacher of Naturalism in Education. *Fifth Lecture.* Pestalozzi, the Apostle of Educational Reform. *Sixth Lecture.* Froebel, the Philosopher of Childhood.

With this summing up of his administrative work, the Superintendent lays down his office to enter upon a new and untried field; for it is understood that Mr. MacAlister, resigns the Superintendency of the City Schools to assume the direction of the future Drexel Institute,* Mr. MacAlister, by reason of his great usefulness in the service

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* "The Drexel Institute of Art, Science and Industry," is founded by Anthony J. Drexel, Esq., of Philadelphia, the head of the well known banking house of Drexel & Co., of Philadelphia, New York, London, and Paris.

The endowment is $2,000,000. It is, however, expected that this will be augmented by other donors.

The building now being erected for the Institute is to be one of the largest and of the public schools of the city, having been chosen by Mr. Drexel, and Mr. George W. Childs, who are at present the only Trustees, to undertake the direction and development of the proposed Institution.

Mr. MacAlister, is to be given freedom in the planning and directing of this new school. The announcement of his plans is awaited with great interest by educators. That the result will fully justify his selection for such an enviable, if onerous, duty, is confidently believed.

The selection by the Board of Education of a successor to Superintendent MacAlister, will be watched with intense interest by all who desire the prosperous development of the new movement in Education, and who are solicitous that the advance already secured in Philadelphia shall not be lost. The gain already effected may be easily jeopardized; the promise of future development along the lines so well and wisely laid down by the present Superintendent wholly thwarted; if the successor, who may be chosen, proves unequal to the arduous task which awaits whoever may be called on to take up the unfinished work now laid down by Superintendent MacAlister.

Great executive ability, wide experience as an educator, open-mindedness, familiar knowledge of, and hearty sympathy with, the new movements in education; patience and tact, in dealing with all men; proficiency in the sciences of psychology and pedagogy, thorough training and high culture, must he possess, who could venture, with any show of success, to assume the duties of the office which has been so brilliantly administered by Superintendent James MacAlister.

MANUAL TRAINING IN THE SCHOOLS OF WASHINGTON, D. C., IN 1890.

An account of the early movements looking to the introduction of Manual Training in these schools, is given in chapter XIII, page 101, of this volume.

The present extent, progress and varied development of the several features of this movement in the public schools of Washington, under the fostering care of Superintendent W. B. Powell, is shown

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finest devoted to educational purposes in this country. In addition to class rooms, art rooms, laboratories and workshops, it comprises a Library and Reading Room, a Museum, a Lecture Hall, and an Auditorium that will seat 2,000 persons. It is situated at Chestnut and Thirty-second streets, Philadelphia. It is to be ready for occupation in the autumn of 1891.

by the following brief extracts from the recently issued "Teachers' Manual."*

This pamphlet contains the progressive exercises designed for the two highest grades of Grammar Schools, and for a three years' course in the High School. The work given for each lesson is shown by lithograph illustrations reduced from blue prints of the working drawings made to scale; while each step to be taken is plainly stated in the accompanying text.

The volume opens with a few pages of "General Remarks;" also, with the course for each year, suggestions as to the best methods of instruction are given.

The preface is here quoted for its statistics:

> The course of work of the manual training laboratories of this city is put into pamphlet form primarily for the benefit of our own instructors and for those most nearly interested in the schools and already having some knowledge of them.
>
> To others who may desire to know the meaning given to the term "manual training" as here used, the following facts may be of interest: From one laboratory, with one instructor, and one hundred and fifty boys, in 1886, the system has grown till, in 1889-'90, there are thirteen laboratories having as many teachers giving instruction to over sixteen hundred boys.
>
> The laboratories, each consisting of twelve benches, with tool outfits, are so located about the city as to be convenient of access from the schools contributing class.
>
> Two hours a week throughout the year are allotted in all grades of the training, which is in addition to the regular work of the schools done before its introduction.
>
> The forms of certain of the practice-work pieces in both wood and iron are either suggested or modified by ideas gained from Mr. C. M. Woodward's "The Manual Training School," as those have been found well adapted to giving the discipline sought.
>
> J. A. CHAMBERLAIN,
> *Director of Wood-Work.*
> J. F. MAC NAB,
> *Director of Iron-Work.*
>
> W. B. POWELL,
> *Superintendent.*
> WASHINGTON, D. C., *September*, 1890.

The opening paragraphs, which here follow, set forth the view taken by the Washington school authorities as to the relation held by the Technical Manual Training School to the entire school system.

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* Public Schools of the District of Columbia. Manual Training: Mechanical Laboratory work, Seventh and Eighth Grades, and High Schools. Teachers' Manual. Washington, D. C. Linotype print. 1890. Pp. 84, with 45 pages of Illustrations.

The introduction of sewing, cooking, and shop-work into public schools of the city was merely broadening out and extending what has been doing in the majority of schools of this and other countries, for years. Free-hand drawing is as much manual training as shop work is. So also is penmanship.

If the hand and eye training secured by the study of drawing is of benefit to the pupil in co-operating with the mental work of the other branches, as is generally believed, it seems wise to extend this kind of training if it can be done without infringing on the time rightfully belonging to any other equally important banch.

Manual training, as understood in the public schools of this city, includes every thing in the course of study in which the hand does a part. It includes clay-modelling, stick-laying, and paper-cutting and folding in the lower grades; free-hand-drawing in all grades ; paper-model making, sewing, cooking, and bench-work in the upper grades ; and cooking, free-hand and mechanical drawing, moulding, forging and machine-work in wood and metal, and work in the botanical, physical, and chemical laboratories in the High School.

Among all these the position of the shop-work or mechanical laboratory work may be clearly seen. It is a part of a system, not a system apart, and must be in line with and co-ordinated with the other parts of the system, to secure that unity which is necessary to any system if it is to accomplish the best results.

The following is the introduction to the Grammar School course:

The following course of work embodies nothing purely theoretical, nothing which experience has not shown to be necessary. More could be added, but the time allotted and the boys' best interests considered in connection with that time make it inadvisable to introduce more.

The forms and dimensions of the various pieces, and the order of succession and method of construction are likewise the results of the experience of different teachers, and are believed to be the best for our shops. If future experience should show that the experience which dictated any of these details was exceptional, or if, in future, exceptional cases arise, modifications should be and will be made. It must, however, be followed closely if the different schools of the District are to send boys to advanced work at the High School equally prepared.

The work in clay and paper and in drawing, in the other schools, is similar in all schools of like grade all over the District. Our shop-work is a part of the same system of hand and eye training ; therefore it should also be similar in all shops of like grade, in order to preserve its place in the system.

In all courses the pupils should work from blue-prints. The accompanying cuts are reduced lithographs of the blue-prints used. The drawings for the first, second, third, fourth, and fifth years of the shop-work are distinguished, respectively, by the letters a, b, c, d, and e placed before the number of the drawing.

From this it appears that, in the judgment of the Washington school authorities, the Industrial Training movement is a desirable feature of public school education.

ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION, DECEMBER, 1890.

Perhaps no more striking example in illustration of the importance which the subject of Industrial Education in all its phases has come to assume in the judgment of political economists could be instanced than the fact that a session of the annual meeting of the American Economic Association, held in Washington, D. C., December 26–30, 1890, was largely given to the reading and discussion of the report made by the Committee on Technical Education which had been appointed two years before.

President Francis A. Walker, of the Massachusetts Institute of Technology; Professor Simon N. Patten, of the University of Pennsylvania; President Nicholas Murray Butler, of the College for the Training of Teachers, New York City, and Superintendent James MacAlister, of Philadelphia, composed the Committee. Different topics of the report had been assigned to each. In the absence of Dr. Butler, who had the topic of the relation borne by Industrial Education to "General Education," and of Superintendent MacAlister, who was to treat of its "Easy adaptation to school curriculum and management," the papers by these gentlemen were only read by titles. President Walker, spoke of "the South Kensington view," and defined the difference between Trade Schools, in which the technique of a given trade is taught; Technological Institutions, in which both engineers and professors of science are trained in their several fields of investigation, or practice; and the general elementary knowledge of tools and industrial processes, which can be given in the public schools. He emphasized the especial value of this latter training to city children; since they are deprived of the opportunities for out-door life and of that training which comes from observation of nature, and is open to every country child.

THE CONSUMERS, AS WELL AS THE PRODUCERS, NEED TO BE TRAINED IN ECONOMIES.

Professor Patten spoke "from the standpoint of Consumption," and after calling attention to the wonderful advances in the facilities of production effected during the past half century, and pointing out the increase in the minute supervision which watches over the raw material; from the first process of sowing the wheat, for instance, till the bread reaches the hands of the consumer; so that, not only have the methods in use largely increased the amount of the materials, but, in addition, the economical use of them in the processes which results from this constant minute supervision, has prevented any appreciable waste; so that the aggregate of the production of useable articles of food, clothing, and of all things needed for man's convenience and comfort, has been greatly multiplied. Still, there seems to be among the masses, no proper relative increase in the comfort and economy of living. He held that this was only to be accounted for by the fact that all attention had been given to educating the producer, and guarding the processes of production; while no care had been taken to educate the people as a whole, in the wise and economical uses of these products. Again, an element of waste is found in the fact that while once many articles for personal or household use, were homemade, and of far better wearing quality than those now manufactured, these home products can no longer be procured, because the factories have put an end to all domestic production; since, at this time, the product of home industry in spinning, weaving and similar processes now undertaken in factories, could not be made to pay the first cost of the materials used; while, in addition, the quality of the low-priced grades of these factory-made goods has rapidly and steadily deteriorated; and these inferior goods are eagerly bought by persons who consider only the first cost, without regard to the enduring qualities of the articles; in many kinds of goods, indeed—such as, for instance, shoes and stockings—it almost seemed to the speaker as if the desire of the buyer was to get goods which would need no mending, but would wear out all at once, like the deacon's one-horse shay, as recorded by Dr. Holmes.

The speaker declared that the same ignorance of true economy prevailed to even a greater extent in the wasteful use of food by the great mass of consumers. It was safe to estimate that at least one-half of all food stuffs used in the United States was thrown away as refuse. The contrast between the dwellers in European countries and the average American, in all matters relating to the cooking and the waste or saving of food, was most striking; and showed what a prodigal wastefulness went on in America, where as yet, there exists the most abundant supply of food products. This waste is owing largely to the fact that we draw our cooks from a class of the immigrant population much lower in the scale of intelligence than are those who are intrusted with the cooking of food in Europe, where the cooks are trained in their particular calling. On the contrary, it often happens that the peasants who come to America, and who are employed in American kitchens to cook for the family, had, at home, been field workers; or, in any case, had not been taught to prepare food. In view of these facts, and of the rapidly increasing immigration of an ignorant population, it has become a matter of serious importance in relation to the prosperity of the country, that this question of "consumption," shall be intelligently considered. Since all are agreed that an increase in the comforts of life and the elevation of the scale of living possible to the poor, is the pivotal point upon which the progress of the community in civilization depends; it is of the highest importance that the consumers, as a class, shall be as carefully taught how to buy wisely and how to use economically—(what food to buy and how to cook it to the best advantage, and what articles of apparel will wear best and are best suited to the uses to which they are to be put)—as the producers are now minutely trained in all the economies and facilities which relate to and promote production.

It is in this aspect of the case that the student of economics should take interest in this movement for Industrial Training; not so much on the side which has, up to this time, attracted the most attention, namely, in the teaching of the arts of production; but, on the other side, that of imparting a knowledge of the economics of consumption and skill in the practical application of such knowledge. It will be seen that inferentially and by suggestion, these statements by Professor Patten, are powerful arguments for increased attention to the teaching of cookery and for thorough instruction in girls' schools especially, in all knowledge pertaining to the household and the family; to those domestic economies, which, small in themselves, still bear the same relation to the prosperity of the whole country, that the character of the individual citizen bears to the standing of the community as a whole. The topics thus indicated seem worthy the careful consideration of all who give any thought to human welfare, and to the means for promoting the comfort and progress of the race.

ART HAND WORKERS DESIRABLE.

In connection with the disuse of household industries by reason of the development of the factory, pointed out both by General Walker and Professor Patten, the possibility and desirability of creating new industries by training children in a general knowledge and practice of the "Minor Arts," as suggested by Mr. Leland; and, also, of educating a superior class of skilled hand art workers, "Artist Artisans," who should reproduce in our age that art quality in objects of use, and of adornment, which was so common in the classic ages, and in Europe during what is known as the Middle Age, can hardly fail to be suggested to any one familiar with the hopes and plans of those who founded the South Kensington Museums, and schools, in England; and of those others, who in America, sought to introduce Industrial Art Drawing in the public schools. It is only by some such subsequent training of the scholars from the public schools, who have been there taught to draw, that the practical value of that elementary training can be effectually demonstrated. The public, unwittingly, perhaps, is deeply concerned in the successful proof that this training is of value, and in the development of the artistic capabilities of many citizen workers; for, the creation of industries which will give profitable employment of the individual art artisan, would aid in giving occupation to many who are now thrown out of any opportunity for useful occupation by the overwhelming production of the factories.

As a partial relief from the congestion of labor, caused by the crowding together of comparatively unskilled workers, and as a source from which thoroughly made articles of use and beauty could be supplied to the community; this possibility which inheres in the movement for the development of Art Industries is worthy of consideration.

It is in this connection that the plea for the inclusion of the art idea in the general plan of industrial training in all public schools is seen to have a direct bearing upon the practical interests of the community.

HOW STANDING ARMIES SERVE IN SOME MEASURE AS SCHOOLS OF THE PEOPLE.

Incidentally Professor Patten, made what was doubtless a novel suggestion to most of his hearers, when he spoke of an important influence exerted by the standing armies of Europe upon the character and development of the people of the different countries in which compulsory service in the army prevails, namely, that this army life was, in fact, a powerful educator of all who served as soldiers; because, they were taught while in the army to give the most careful attention to all details of personal cleanliness, appearance, and demeanor, and compelled to take the most minute care of every object entrusted to them, and to exercise the most watchful supervision over all things pertaining to the uses of the army. This constant training is supplemented also, by the habits of immediate obedience there acquired and shown by all subordinates to superiors, as enforced by army discipline.

After illustrating this habitual attention to details to which the soldier is trained by reciting his observation of a company of artillery when preparing to go on duty; describing how each man carefully supervised everything pertaining to the harness, the horses, the cannon; then, telling how at intervals came the corporal, the sergeant, the lieutenant, the captain, who, each in turn, gave like careful attention to the soldiers, the horses, the cannon, and to each and every little detail of dress, accoutrement, and bearing; the result of all this compulsory training, as well as of the unconscious influence exerted by this life of routine, being that when the once ignorant peasant returned to his home at the expiration of his term of enforced service in the army, he was an altogether different person from the unformed conscript who had gone away a few years before; from an awkward greenhorn he had become a trained man, and was eagerly sought for as a desirable workman by employers. He had learned the great lesson, to care for small things. To this kind of training given by the army to so many of the people of Italy, the army thus serving as a great training school for the people, while the returned conscripts become, each, individual centers of a similar educational influence upon their associates, the professor attributed an important element in the great advance in the prosperity of the people of that country since Italy became one kingdom.

This is surely a more optimistic view of the influence of militarism upon a people than has been hitherto wont to be expressed by the professional philanthropists; in whose judgment the terrible burden and evil influence of standing armies had no possible redeeming feature.

When, however, the professor suggested that the teacher in the public schools should do for the American pupil what the army does for the European peasant—in a similar way of attention to personal habits and to infinite details—one wonders how he could imagine that a single teacher, in charge of from fifty to eighty free scholars in unconventional America, could attempt the work which he had shown it took not only the private soldiers themselves, but all the non-commissioned and commissioned officers of a company, to effect; supplemented by the stern conditions of prompt and unquestioning obedience imposed by military discipline.

Professor Adler, in the discussion which followed, suggested that in the workshops of the manual training school proper, with classes of a dozen or so, this attention to minute details was practiced; and resulted in very marked improvement on the part of the pupils. This feature has been often urged as one of the valuable results of this training in mechanics.

PLAY GROUNDS SHOULD BE RESERVED IN PUBLIC PARKS.

Referring to General Walker's remarks concerning the needs of city children deprived of out-of-door opportunities for work or play, Professor Adler, urged that in the parks of the larger towns and cities large spaces for use as "play grounds" should be reserved, which all youth should be encouraged to frequent for voluntary sport and exercise; perhaps, he suggested further, this attendance might very well be stimulated by the offer of prizes for excellence in games. He placed great emphasis upon this voluntary feature, and urged that care should be taken that these sports should not be regarded by the children as in any way coming under the head of "duties" or as forming any part of the regular school "grind," but should be spontaneously resorted to by them for enjoyment.

PURPOSE AND PLAN OF THE PRESENT VOLUME.

The general plan of this Report was given in the Introduction to Part I.* As has been already stated the present volume has been mostly written since the issue of Part I, so that the accounts of the pioneer Typical Private Manual Training Schools, of Boston, and St. Louis; the Mechanic Night Drawing Schools, in the different cities; the Institutions for Technical Training; the Agricultural Colleges, and the Schools of Science; which were announced to appear in this volume are now transferred to Part III. Similar delays to those accompanying the issue of Part I, have hindered the publication of the present volume; the result in this instance has been that contrary to the original design, this volume is almost wholly concerned with the interests of the public schools. Such other institutions as are included are inserted because of the value of their experiments to those engaged in the management and direction of the public schools.

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*See Part I, pages XXIV–XXX.

THE PUBLIC SCHOOLS ANTAGONISED.

The unusual manifestation during the past few years of antagonism to the public schools, which has been forced upon the attention of all who have had occasion to watch the trend of public opinion in connection with free public school education, has led to a still further modification of the original plan of this volume; inasmuch as the preservation of the public schools themselves in their entirety and vigor, is of far more consequence to the people of the United States, than any question of whether this or that particular study shall be added to their course.

It seems almost incredible that in this era of our history any re-statement of the foundations on which the public school system must rest,if it is to endure, can be needed. Yet so open is the opposition from various sources, that it has seemed advisable to give in the opening Appendix of this volume, the best available statement of the claims of the public free schools upon public support as made by the great founder of these schools and by other distinguished authorities, down to our own day; and, also, to give in his own words the modern arguments against these schools; as stated by a recent writer in a volume treating of "Industrial Liberty."

PRESIDENT JOHNSTON, OF TULANE UNIVERSITY, ON THE NEED OF FREE COMMON SCHOOLS.

As these words are penned I am in receipt of an address* written by one of the most advanced educators of the present day, Col. William Preston Johnston, the honored President of Tulane University, New Orleans, who early identified himself with the new movement in education by opening a successful Manual Training Department in the University over which he presides.

In his address having for its main subject "Agricultural education," President Johnston first defines education; and secondly, considers the present situation in Louisiana. He calls attention to the fact that the vast majority of youth in that great State can have no prospect of any school education beyond that of the "common school." What he says of his main topic is not here quoted, as it relates directly to the Agricultural Colleges, accounts of which are in Part III, of this Report. His words, however, on education in general, so strikingly in contrast with the utterances of some other advocates of Manual Training; and his impassioned statements of the absolute need, for the safety of the community, that free public common schools be established and maintained; are so applicable to the topics considered in this volume, that, as they are received too late for insertion in an Appendix, they are quoted here.

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*"Agricultural Education," an address prepared for delivery before the annual meeting of the Louisiana Educational Association at Shreveport. The sickness of President Johnston preventing this, it was published in the Daily Picayune, New Orleans, August 4, 1890.

After a brief introduction, in which the tendency of educators to idealize and theorize, is recognized; as well as the willingness of the American people to fairly test theories; while, at the same time, they demand practical results, failing which, no theory is long tolerated, he says:

What is a true education? I have been trying now for many years to impress a thought, not new with me—only a history of philosophy from the beginning can tell how old it is—and that is, that education must be integral; it must regard, and work with, and develop the whole man, not one side of him, not a part of him.

The first thing we have to consider in education is

WHAT WE HAVE TO EDUCATE.

We must recollect that it is a human being. Man is man, not a bundle of qualities and attributes. He has those attributes, it is true: but, in our analysis of them, we are too apt to abstract them from the man, without which they are nothing and he is nothing. We speak of man's threefold nature—soul, mind and body. Now there is not simple interdependence between these. as this formula sometimes seems to imply; not a mechanical junction, but a more than chemical union—a psychic or divine unity, so that one cannot exist without the others, in so far as our knowledge of human relations enables us to comprehend the matter.

* * * Man being one, education should, as far as possible, respect this unity. Indeed, even in its crudest efforts it is hard for it to help one side of our nature without in some way helping all sides indirectly. Remotely though it may be, yet still whatever strengthens the members will eventually in some sort add to the power of the whole man; and those things which most evenly develop all sides of his being will at the same time make him the best balanced man. the best equipped man, the most perfect man. So, man being one,

EDUCATION SHOULD BE INTEGRAL.

When the gold-beater spreads the precious metal with marvelous tenuity, or the silk weaver produces filmy tissues that rival the cobweb, or the chemist, or physicist, leaving the visible forms of matter, deals with subtle gases or the yet subtler forces of nature, we accord our admiration to his deftness, skill and imaginative insight. But the educator has for his work to refine an essence to which even oxygen and hydrogen and electricity are gross and material. The spirit of man, which is the outbreathing of the spirit of the absolute, the infinite God, is the substance which he is to train and fashion and develop into a nearer likeness to its divine ideal, for this is the sum and final aim of education. To develop an intellect, growing to a loftier stature, with an eye far-reaching, clear and profound, a soul ever nobler in its aspirations, and a body built to be a fit temple for the indwelling spirit, this is the ideal education. But this is work for a philosopher. Yet, though we cannot all be philosophers, we may sit at the feet of philosophy, and, in obedience to her voice, we may lead the young mind to higher levels and fuller views of truth.

To me it seems that the chief difficulty interposed between the teacher and success in his work is the inability to realize that man is not merely material; that, as God is a spirit, so man in his likeness is also a spirit. Bewildered by the plausible but delusive analogy of Locke, the teacher essays to write on the mind as if it were a sheet of white paper. But never was pen, or pencil, or stylus so fine that the characters traced by it on the tablets of the brain were just what the writer intended them to be. Scarcely is the lesson done when the magic chemistry of that wonderful organ has transformed the script, has translated its meaning into an alien language, has blazoned and illuminated the page with a perverted doctrine in new, strange and contradictory formulas. Like paints laid upon the plaque, the ideas spread upon its unblemished surface take fresh and different hues under the heat it puts forth—heat evolved by the never-ceasing pulsation and play of functional activity.

To be more accurate, what we talk about as the mind is really the man, an organism that cannot be dealt with mechanically. It has its laws of growth. These we must respect. All men know that when we work in accord with the laws of nature we attain maximum results; when we strive against them we invite defeat. We should ask, then, what are these laws of being, what these laws of growth, and should conform to them.

The first fact in that branch of practical psychology which we term pedagogy, or, if you please, education, is the self-consciousness of the mind, involving thought and will and moral purpose, which may be summed up in the word, self-activity.

After showing that the mind of the child is not like the hopper of a mill into which whatever is poured will be ground out, and that the province of the teacher is to awaken the thought of the scholar and to direct that thought into logical channels, he asks:

But how? Yes, how shall we develop that young and tender mind, which, like the body which contains it and which it informs, is so feeble in present power, so potent in ultimate possibilities? Philosophy tells us that it is by conforming to the laws of nature. Heredity, environment, doctrine, discipline, these are the four corners of the temple of education. What the child has by inheritance is firmly fixed, and we must accept it. What is good in its birthright we may develop; what is evil, modify; but only by respecting the existing fact, by working with, not against, nature. The environment is, except in the brief hours of the schoolroom, almost beyond the control of the teacher, except as he may reach and improve it through the conscience of the pupil. But his doctrine, or teaching, and his discipline, or training of the youth, are in his own hands. Exactly in so far as these are adapted to the age, intelligence, character, physical strength, condition and needs of the pupil, by just so much will the education imparted prove effective and beneficial. This is a true interpretation of the principles of Ratich, and of everybody else who has thought on the subject, that "in education everything should be according to the course of nature." And this should be our procedure in any system of education we may adopt.

SOME OBJECTIONS TO EDUCATION CONSIDERED.

Sometimes I find people, who are very sensible about other matters, opposing education, because, as they say, it unfits the people intended to be benefited for the sphere of life in which they must live. My answer to them is that what they object to is not education, but a wrong education. True education must carry along with it not only a little book learning, which may merely make a man wise in his own conceit, but, by whatever means available, a strengthening of the moral fiber and elevation of the moral nature and an added power of doing something well. We speak of intellectual training, moral training and physical training, as if they were independent processes, forgetting that, with all our analysis, a man is, as I have said, after all, one, and that we separate his mind, body and spirit only by a mental act, and not in fact. He is one; and whatever lifts up any part of his nature, though it may not directly improve his other functions and faculties, yet it offers to them potentialities of progress, a stepping stone on which to rise. The method adopted for the education of idiots and imbeciles is to teach them good habits of body, and the use of their hands in simple arts until, by repetition, these habits become almost automatic. And this is but an extension of the training every sensible mother gives her infant. Then, by some strange and subtle reflex action of body upon mind, the poor creature advances through doing something to a species of thought and self-control. Thus we see the mind of an idiot or imbecile unfolding its pale petals to the light under the influence of hand-training in the simplest textile arts. Is there then any spiritual philosophy so high that it may not borrow an added strength from a wider or profounder view of the material world?

WHAT SHOULD BE THE AIM AND PURPOSE OF EDUCATION.

On the other hand, are they in the right who point the young, and especially their own children, to the things of this world, money, power, rank, as the chief things to be sought, the be-all and end-all of existence? More than two thousand years ago, as Plato tells us in his Euthydemus, Socrates took a higher view of this matter than most of our wise men of to-day.

Socrates, after defining happiness as the possession of the goods of this life—namely, wealth, health, beauty, good birth, power, honors, temperance, justice, courage, etc., asks, "What do possessions profit a man, if he have neither sense nor wisdom." He adds:

"Cleinias, the sum of the matter appears to be that the goods of which we spoke before are not to be regarded as goods in themselves, but the degree of good or evil depends on whether they are or are not under the guidance of knowledge. Under the guidance of ignorance, they are greater evils than their opposites, inasmuch as they are more able to minister to the evil principle which rules them; and when under the guidance of wisdom and virtue, they are greater goods, but in themselves they are nothing." "What then is the result of all this? Is not this the result that other things are indifferent, and that wisdom is the only good, and ignorance the only evil?"

And, surely, this seems true enough, if we discriminate between knowledge, as the intellectual apprehension of truth, and wisdom, as that spiritual insight and moral energy, which includes this knowledge and also enables the possessor to use it aright, and if we regard ignorance as the want of this wisdom. But, long before Socrates, Solomon told us, "How much better is it to get wisdom than gold." Yes, it is wisdom that we should strive for, wisdom which includes the will and the power to do the right thing—not the wrong thing—in the right way.

THE HIGHEST WISDOM

consists in moral power, guided by trained intelligence, and skillfully carried out in conduct—in useful action, in beneficent deeds. Now, just in so far as a man advances towards this wisdom, if it be but to take a single step, in so far he is on right lines—his education does him good. A very little learning—to count ten, even—is a step. It cannot in itself hurt the learner. It has conferred added power upon him for good or evil, it is true; but, in quickening thought ever so little, it has set the mind at work, to stop we cannot tell where. It is the flume that may open up a crevasse, through which may pour all the tides of a mighty river. The power to grasp intellectual conceptions aids the power to grasp moral conceptions, which, though not morality itself, is in the direction of it. Therefore, do not fear the light. Do not fear education, but try to make it of the right sort.

I trust you will pardon me for treating at such length the general topic of education when so much is written and said about it. But I find in what I read and hear and see so much that strikes me as narrow, and short-sighted and fallacious, that I have been tempted to dwell perhaps unduly upon the excellence of a well-rounded education.

WHAT IS TRUE "SUCCESS" IN LIFE?

We hear much of the superiority of practical men over learned men in success in life. But the question is, who is the practical man, and on this point there is much confusion of thought. One set of people point you to a man who by the pursuit of a single object has overtaken it. Is it wealth? He has made an immense fortune. He always begins by "sweeping out the store," in this narrative of victory, an excellent, but not a certain, forerunner of success, for some fellows are sweeping out the store still. But only the knower of all hearts can tell by what sacrifices he has gained his end. Who can tell how much of domestic bliss, of generous impulse, of irradiating, inspiring thought he has had to forego to win the goal of his endeavor. His life may have been a blessing, or a curse, to him and his fellow-men; that depends on how he got his money and how he used it. But is his success really any greater than that of, let us say a good professor of Greek; for if I am to believe the press, the Greeks have no friends, and we may, therefore, take him as an extreme case. The professor may be a little threadbare as to his coat, and his home may be as simple and plain as a stoic's, but he, too, has won what he set out to attain; he has invaded and conquered the world of Hellenic art and culture, and has imbibed that philosophy which makes what money buys of secondary importance to him. Has he attained a less success than his rich neighbor? If he has not what money buys, he has what money cannot buy, what only mind can supply. He cannot purchase truffles, but he has plenty of grits and figs and shrimp or crayfish if he lives by the water side. His nabob neighbor can buy truffles, though possibly he cannot digest them and may have, after all, to stand by the common diet. No matter how much he has he can only use so much of it while he lives; he cannot take it with him when he dies, and in his grave he cannot even perpetuate it in his family. This has been proven to us all. Now, both of these men have been successful, both have got what they wished, and every one is at liberty to select the lot he prefers. I do not see that one is more practical than the other.

THE KIND OF "SUCCESS" SUGGESTED BY SOCRATES.

It is hardly fair to call into court on such a question as the choice between wisdom and wealth so partial a witness as one who laid down his life to attest his faith in the former. But I shall again summon one Socrates, a shabby old man who went around Athens insisting on putting into plain words the fine phrases with which its rich men and shallow thinkers clothed ugly thoughts and deeds. He offended people, perhaps he even bored them; but he is still remembered, after two thousand years, as second to no other man in the essentials of living. He says: "O my friend, why do you, who are a citizen of the great and mighty and wise city of Athens, care so much about laying up the greatest amount of money and honor and reputation, and so little about wisdom and truth and the greatest improvement of the soul, which you never regard or heed at all? Are you not ashamed of this?"

Let me quote one more saying of his:

"If death is the journey to another place, and there, as men say, all the dead are, what good, O my friends and judges, can be greater than this? If, indeed, when the pilgrim arrives in the world below, he is delivered from the professors of justice in this world, and finds the true judges who are said to give judgment there, Minos and Rhadamanthus and Æacus and Triptolemus and other sons of God who were righteous in their own life, that pilgrimage will be worth making. What would not a man give if he might converse with Orpheus and Musæus and Hesiod and Homer? Nay, if this be true, let me die again and again!"

Who remembers now the merchant princes, the leading politicians, the generals, the orators who lorded it over Athens in those days? They and the jury who condemend him are gone—gone to Minos and Rhadamanthus to be judged. But the old teacher, heretic, outlaw and bore who loved truth, he is alive in his thought now here on earth, helping to hold up and sustain those who love it and follow it, and surely, I think, he is alive in the heavens also, "with the other sons of God who were righteous in their own lives."

Is our aforementioned professor of Greek, then, altogether vain and foolish in following in the footsteps of this great thinker, if, indeed, by doing so, he may even here in this earthly pilgrimage converse not only with Homer and Hesiod, but with Socrates himself also, and his disciples who still sit on thrones in the great audience chamber of philosophy?

A REALLY PRACTICAL EDUCATION

is one which is well rounded and adjusted, as far as it goes, so as to bring into play all the faculties of our being, of mind, body and soul, so as to lead us toward, if not to, wisdom. I am not saying that all this is, or can be, or should be, done, or attempted, at school. We all know how much of our education is done at home, by playmates, by books, by newspapers, by society, by the church, by the thousand agencies of the environment. What these other agencies do not effect for good, the school must attempt. And, with its brief time, its slight hold upon the pupil, and its small resources, it must attempt little more than to remedy the defects of the education which takes place outside of its walls. It has its ideal; it must keep it ever in view; but it must recollect its own limitations also. It must consider especially who are the people it has to deal with, and what special life it is training them for.

In the present discussion, I do not propose to enter on the general question of university education; but to restrict myself to agricultural education. Now, if I have made myself clear at all in the foregoing remarks, it will be apparent that no mere cramming process, no mere mass of information, will at all comply with my ideas of an education. It must involve training, and, through this training, an unfolding of the mind and all the powers of the man. The student must be taught to know, to do, and to be. He must learn to think, to act, and to aspire. Now, how are all these fine things to be brought down to a solid basis here in Louisiana? That is the question.

THE SITUATION OF THE CHILDREN IN LOUISIANA.

There are certainly not less than 50,000 white boys of school age in Louisiana who are dedicated, I might almost say predestined, by the circumstances of their lot, to till the soil. The vast majority of these will never get beyond the elementary education of the public school. It will be well for us, if they receive even so much as this. It does not seem a very magnificent gift for parents, or society, to confer upon a child, in a great American commonwealth, to furnish it with such very simple tools for the processes and interchange of thought, as reading, writing and arithmetic. In Iowa, only about four persons in a hundred are ignorant of these things. The despotisms of Europe teach almost every low-browed peasant as much as that. Yet here in Louisiana, fifty out of every hundred, if we include the negroes, are in dense darkness as to their use, and twenty-two out of every hundred of white people cannot read and write. What is worse, most of these do not wish to possess even the feeble beginnings of knowledge, for themselves, or for their children.

President Johnston thus refers to the prospect of aid from the General Government to assist the States in providing common schools which was proffered by the "Blair bill;" this aid, however, strange to say, after having been warmly advocated was suddenly bitterly opposed by the press of the State.

After reciting various pending measures obnoxious to the State, but not opposed with any such vigor as was shown against the proposed aid to education, he says:

> We must submit to all these, but we are startled forth to save the constitution, if federal aid is invoked to help to educate the negroes, whom the United States laws made voters, or the white children who are pauperized by iniquitous legislation. Since the dominant feelings in this State, as thus represented by its press, has rejected this chance to get out of the woods, we must do as we are able, make shift to get along, get schoools somehow, by hook or by crook.

THE IMPORTANCE OF THE PUBLIC SCHOOLS FOR THE CHILDREN OF LOUISIANA CANNOT BE EXAGERATED.

The first thing is to induce people to think that the education of their children is the most important thing in the world, and that they must have it. It is more important than carpets on the floor, curtains at the windows, delicate food on the table, or fine clothes to wear.

* * * * * * *

You can have public schools, if you will, if you determine to, and you can make them good schools, too. Thought, purpose, action will do it. Lay awake at night, and think about it. Plan, resolve, take your neighbor by his horny hand, and say, we must do this thing. Spend your substance for it. This is the great investment. It will come back to you in a hundred ways. Build up the public schools, and you will have solved a large part of the problem of agricultural education, of education for the farmers.

VALUE OF THE UNCONSCIOUS EDUCATION OF THE HOME AND OF NATURE.

A good deal more of it you will solve at home. The boy who is brought up to plow, to plant, to hoe, to use the ax and farm tools, to ride, to drive, to tend cattle, to do all the varied forms of labor about the garden, the field and the herd, that are, or ought to be, carried on upon every farm, has had to do much thinking. He knows a good many things. His book learning may not be great, and his school hours may have been few; but besides his parents, he has had one great teacher, worth all the rest, Mother Nature. If only some kindling thought, some message received from printed page, or human speech, or the voices of the pine woods and the running brook have borne into his soul that the world about him is instinct with spirit, with the spirit of God, all the rest will come to him gradually, as if by a divine revelation. O! Mother Nature! it is upon thy lap that the country child is nursed! Thou hast sung thy songs to him; thou hast built up his pleasure domes of form and color; it is thou who hast woven his dreams in the silent hours of the night. Ancient of Days, thou hast pity upon thy latest born, the child of thine old age, man; and when he vainly rebels against thy inexorable decrees, it is thy kindly hand that leads him into the straight path again and soothes him with an unnamed solace.

With the teachings of home—the sturdy morality and manhood of our humble Louisiana homes—and with small help from the public schools, our present generation of country boys will have, in the main, to be content. O, my God! how I wish it were in my power to say that more, much more, was plain to my view.

But is this all? No. What I have said applies to the mass of our people, but there will be a favored few who may achieve more, who may do better for themselves, who may grow up to constitute that "remnant," which has been the salvation of the people from the days of the Hebrew commonwealth to our present time. With these as leaders, and a good public school system, the great host who constitute the body of the people may weather the social and industrial cyclones which are now threatening to sweep over the most civilized nations.

The worth of the free public schools to a community, and their necessary limitations, could hardly be stated with more force or eloquence. In the remainder of this most admirable address the subject of the higher education now demanded for practical success in farming, owing to the advent of machinery in this as in all other fields of industry, is clearly shown; a fact particularly applicable to the sugar industry of Louisiana in the prosecution of which, knowledge of complicated machinery is essential to success.

In view of the frequent denunciation of the study of "words" as contrasted with that of "things," uttered by so many of the advocates of Manual Training, I quote a single paragraph from that portion of this address in which the studies desirable in an Agricultural College are outlined:

"I have said nothing of language studies. Yet speech is the vehicle of all thought, and its competent use is a prime educational duty. Suffice to say that a really masterful study of the English language, in all its branches, in its history, philology, literature, composition and elocution, is no inconsiderable education in itself. And this should constitute a large share of the course."

It is evident that, in the comprehensive view of education taken by President Johnston, all phases of Industrial Education as well as that of the Manual Training School in particular, take their places in due relation to all the other methods of education which have been found best adapted to develop all the faculties of the human being.

This testimony thus given in no uncertain words, by the distinguished educator at the head of the leading University of the great State of Louisiana, as to the absolute necessity to-day of free public common schools, is here quoted in addition to the similar tributes paid by the elder and later educators of the country, as collated in the opening Appendix of this volume.

HON. RANDALL LEE GIBSON ON EDUCATION.

In a speech delivered in the Senate, December 19th, 1890, the Hon. Randall Lee Gibson, U. S. Senator from Louisiana, in quoting from a "circular" issued by the Commissioner of Education, took occasion to state so clearly his own belief in the necessity of the education of the people in a republic, and also his estimate of the value of industrial education, and of the great good resulting to the several States from the land grants of 1862, and subsequently, made by Congress to the mechanical and agricultural colleges; also emphasizing, by these extracts, the importance of industrial training to both white and colored children, that brief quotations from his remarks seem most fitting in this connection and are here given.

It seems proper to state further, in view of Dr. Mayo's description of Tulane University, that it is to Senator Gibson that the present form and organization of that institution is largely due. Mr. Tulane having sent for Senator Gibson, and first to him confided his purpose to make a gift for education in New Orleans, consulted with him in reference to the direction and management of the proposed fund. A number of leading citizens were then called in to form, with Messrs. Tulane and Gibson, a Board of Trustees. By wisely uniting under the new charter the several long established professional schools of the State University; by the creation of new departments, with facilities for giving to pupils early opportunity for availing themselves of the advantages offered by the new movement in education; by establishing under Professor Ordway a fully equipped Industrial Department; by the provision for the free normal training of teachers, and by the opening of free courses of public lectures; the New University, arising on the strong foundations laid by the splendid gifts of Mr. Tulane, was so wisely planned and liberally administered, as to embrace within its broadened scope Elementary, Industrial, Technical and Professional Training; and, thereby, to open to the community untrammeled access to the opportunities so freely and generously offered to all.

The Free Drawing School attached, with its day classes, and the evening classes for men, with courses in mechanical, architectural, and free-hand drawing; afford to the artisans of New Orleans similar facilities to those given by the Maryland Institute classes in Baltimore, and by those of Cooper Union, in New York.

This University, then, under the liberal co-operation of the Board of Trustees, and the wise administration of President Johnston and the faculties of the several schools, stands as the crown of the whole system of public education in the State; and is in touch with all the public schools. Differing widely in these respects from the antique pattern of the classical university where men were simply trained for the learned professions.

As Industrial Drawing and Manual Training are made compulsory studies through all the classes of the preparatory high school and in the freshman class of the University, it is especially fitting that such notice as Senator Gibson has quoted from Dr. Mayo's statements should find place in the pages of the present volume.

The extracts here given comprise quotations from the pamphlet by Dr. Mayo, and a short excerpt from the communication made by Bishop Haygood to the Conference, in 1890, at Lake Mohonk; Bishop Haygood being in charge of the Slater Fund for the education of colored persons in the South, and therefore intelligent as to the situation. In a single sentence, the last here quoted, the Bishop presents a strong plea for the union of books and tools in the training of the colored children.

In the course of his remarks, having already cited the testimony of Dr. Mayo on the general condition of the South, Mr. Gibson further said:

I find Dr. Mayo has prepared for the Government a paper upon industrial education in the South* which will give Senators an insight into what is going on in the Southern country respecting the education of the hand as well as of the heart and of the mind. Dr. Mayo, at the outset, pays this tribute, and I hope a well-deserved tribute, to the people of the Southern part of our country:

"It is true that no people under similar circumstances have made such progress in popular education as these sixteen States during the past twenty years.

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*Bureau of Education, Circular of Information No. 5, 1888. Industrial Education in the South, by Rev. A. D. Mayo, Washington, Government Printing Office, 1888, Pp. 86.

"When the Southern people are urged to 'put their own shoulders to the wheel' and give up expectation of outside help, the fact revealed by the forthcoming report of the Bureau of Education that the Southern Atlantic group of States is taxing itself on its own valuation within one-fifth of a mill on the dollar as much as the Northern Atlantic group, the wealthiest States in the Union, while it is able to give even to those who attend school less than half the annual sum given by the northern group, rises as a warning to undue expectation."

Now, I will admit that in some of the Southern States in which there has been a large immigration of negroes in the last ten years from the Southeastern States the number of people who can not read and write has somewhat increased, but I insist that what Dr. Mayo says is true, that the people of the Southern country as a whole have exerted themselves personally and taxed their resources in proportion to their value more than any other people in the world in the last twenty years to promote the cause of education, black and white. One of the phenomenal features of this development of Southern society is the fact that while the property belonged chiefly, nearly all of it, to the white people of the South, they have cheerfully divided the amount received in taxes for education equally between the colored people and white people in proportion to numbers.

IN THE EDUCATION OF THE PEOPLE LIES THE ONLY SAFEGUARD OF A FREE REPUBLIC.

Mr. President, I think that education is the only basis upon which a foundation may be had for the institutions of self-government. If I had my way I would vote aid from the Federal Treasury and assist these States to qualify persons, the rising generation, to become intelligent voters. I do not believe for one that ignorance can be made a safeguard for Republican institutions. It may be tolerated, it may be nourished under despotism or in a monarchy, because a few men conduct such government, trained statesmen who from boyhood are reared in their universities with a view to public life in Parliament and in cabinet—great military and naval institutions, whereby they fit themselves to command armies and navies.

It is not so with us. We have no privileged class. We have the most complex and intricate institutions that have ever been devised by philosophical statesmen. The institutions of despotism are simple, easy of understanding; it is the will of one man or the will of a few; but here these institutions were established to reflect the will of vast multitudes, the many voices of the people stretching from ocean to ocean, to control and direct the operations of their Government.

I for one regret that this bill of distrust, * * * finds consideration here, instead of the beneficient and wise measure which the Senator from New Hampshire, Mr. Blair, brought into this body and for which he labored so zealously and for which, as one Senator, I honor him.

Mr. President, this paper of Dr. Mayo discusses the development of industrial education throughout the South. I will not detain the Senate to read it all. He speaks of these institutions in Virginia, Texas, Mississippi, Kentucky, and Alabama. He applauds the institution, with which the Senators from Mississippi are doubtless familiar, the one at Starkville, and the one at Auburn, in Alabama. He praises, very properly, the work of the administrators of the Peabody fund, who are establishing normal schools for teachers in the Southern States. He lauds the administration of the Slater fund by Dr. Haygood, a bishop in the Methodist Church, a man, I believe, honored by everybody who takes an interest in education or in the development of the negro race.

Mr. President, I may be pardoned, perhaps, if I read briefly from what he says of the development of this system of education in my own State.

* * * * * * *

"TULANE UNIVERSITY AND INDUSTRIAL EDUCATION.

"But the most interesting and significant of all Southern movements for the combination of industrial with the secondary and higher education is found in Tulane University, in the city of New Orleans, La. This institution, already in the number of its students one of the largest in the country, was established four years since, through the gift of $1,500,000 by Paul Tulane, a retired merchant of that city, and now includes the former law and medical schools of New Orleans, with the University of Louisiana as its academical department. Originally established for white boys, it has recently been enabled, by the munificence of two ladies, to include a college for the higher instruction of girls and a valuable free library. President William Preston Johnston and the trustees and faculty of Tulane University have displayed remarkable wisdom in its organization and management.

"With full appreciation of the great needs of Louisiana for popular education the new university touches every spring of instruction. In its free dispensation of normal instruction for the teachers of New Orleans, its support of an elaborate system of free lectures on a variety of topics, its collection of a good museum and library, its accessibility to all classes, it is assuming the natural leadership of popular education in Louisiana. The writer believes it is the only university of the first class that has had the courage to make manual training and industrial drawing a compulsory exercise through its entire academical and freshman college classes. The industrial department, under the management of Professor Ordway, formerly of the Massachusetts Institute of Technology, and a corps of able assistants from the Massachusetts State Normal Art School, with possibly one exception, is the most extensive and best furnished in the Southern States.

"Through its college and a variety of evening classes for men, women, and mechanics and frequent courses of practical lectures to associations of workingmen, its society for the promotion of industrial and decorative art, and its school of artistic culture in the girls' Sophie Newcomb College, it is becoming the most beneficent agency in the Southwest in the development of what may be, in the near future, one of the most prominent features in the life of New Orleans. This city, so wonderfully placed by nature as the metropolis of one of the most richly endowed portions of the Union, with a large population of French descent, inheriting all the aptitudes of the home stock, and an unusual number of the ablest class of the colored folk, can not fail, under its present leadership, to become. at no distant day, a great center of decorative, ornamental, and artistic production, similar to the leading manufacturing cities of France."

We have also several flourishing colleges for colored people in the State of Louisiana for higher education, to one of which the State gives $10,000 a year. That institution will share equally with the university for the white youths the beneficent legislation initiated and conducted by the venerable Senator from Vermont, Mr. Morrill. I do not know of any single act in the history of the Government that has done more practical good than the legislation of 1862 whereby the public lands or portions of them were dedicated to the establishment and maintenance of mechanical and agricultural colleges in all the States.

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Now, I beg leave to refer to the testimony of the Reverend Bishop A. G. Haygood, on page 85 of this pamphlet,* and I ask that that shall be printed without reading to the Senate if there be no objection:

"MY DEAR SIR: Circumstances involving duties forbid me to attend your Mohonk conference. If it be desirable, let your Secretary read the brief statements that follow:

* * * * * * *

EDUCATIONAL EXPENDITURES IN THE SOUTH.

"4. A great work has been attempted and great results have been achieved. In carrying on the higher schools, Northern benevolence has expended about $16,000,000, and hundreds of good men and women have expended themselves. This benevolence has been magnificent, this personal consecration sublime. In carrying on the public schools and in aiding normal schools, the Southern States have expended considerably over forty millions. This is a most creditable showing. Considering the conditions that followed the war and the poverty of the Southern people for the twenty years following the war, it is extraordinary.

"No poor and illiterate people ever received so much help during twenty-five years, as no such people ever made such progress before during the same length of time. Not a few worthy people seem so impatient to have done with this work that they can not be grateful for the great results that have been achieved. As to the best method of helping them. experienced people gravely question whether direct aid—as money given without any conditions—is not more hurtful than beneficial. The money that most aids them is money earned. The approved method now is to give aid for work actually done. This plan secures them the money and develops self-respect and tends toward self-support.

"5. The essential goodness of industrial training in connection with the ordinary school training is now universally admitted by experienced and practical people. In the schools aided by the Slater Fund during the school year 1889–'90 as many as ten thousand young people were taught in books and in some branch of useful industries. This sort of training is vital now. Mere book-schooling with poor and illiterate people breeds wants faster than it develops the ability to provide for them, The outcome is misery. Tool craft helps to realize the aspirations that book learning inspires."

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*First Mohonk Conference on the Negro Question, held at Lake Mohonk, Ulster County, New York, June 4, 5, 6, 1890, Reported and edited by Isabel C. Barrows, Boston. Geo. H. Ellis, printer, 141 Franklin street, 1890. Pp. 144.

A single additional quotation from an address delivered fifty years ago by Edward Everett, then governor of Massachusetts, on the occasion of the opening of the first two State Normal Schools, in which the relation of these common schools to the people are felicitously summarized, seems pertinent:

> If there be any persons, to whom the words "common schools" and "common school education" convey an idea of disparagement and insignificance, such persons are ignorant, not merely of the true character of our political system, but of the nature of man. * * * They (the common schools) give the keys of knowledge to the mass of the people. * * * Our common schools are important in the same way as the common air, the common sunshine, the common rain, invaluable for their commonness. They are the corner-stones of that municipal organization which is the characteristic feature of our social system, they are the fountain of that wide-spread intelligence which, like a moral life, pervades the country; they are the nursery of that inquiring spirit to which we are indebted for the preservation of the blessing of an inquiring Protestant, spiritual faith.

Such a consensus of testimony in favor of the free common schools of the people, by those of different generations best qualified to judge, would seem sufficient to end all discussion.

One of the strongest claims made by the advocates of the Industrial Training movement is that its general adoption will lead to increased and prolonged attendance on the public schools; that the Kindergartens, by taking the children at a younger age than the primary schools, and the Manual Training Schools, by retaining them for one, two, or three years later than they would otherwise remain will secure to the pupil a more thorough education; while it is claimed that by these new methods the interest of the children is awakened and that the self-interest of the parents is appealed to by the fact, as asserted, that the child by this training is the better fitted to be a more remunerative bread-winner.

These considerations have led to the giving this volume, beginning with Chapter IV, so entirely to a record of the progressive steps of this movement.

SOME WORDS ABOUT THIS BOOK.

The general arrangement of this volume follows that of Part I. It should, perhaps, be stated that the original matter written by the author and editor is printed in "Long Primer" type, while quoted matter, with a single accidental exception,* is printed in "Brevier."

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* See Appendix L, Paper xv, page 937.

Commissioner John Eaton, whose interest in this Report is shown in the letters of transmittal which are given in Part I, having resigned, owing to ill health, was succeeded in August, 1886, by Commissioner N. H. R. Dawson, who has been, in turn, succeeded in September, 1889, by Commissioner William T. Harris.

Owing to the fact that Dr. Harris has long been a recognized authority on educational topics, several articles by him had been included in the Appendices and put in type, long before his appointment as Commissioner was contemplated. The paper on "The Intellectual Value of Tool Work," read at the Nashville meeting of the National Education Association, July 15, 1889, has been since added.

As this volume has, of necessity, become a continuous record of the contemporary developments and phases of the educational movement which it chronicles, it has been thought expedient in all quoted matter in the text of the book, and especially in the Appendices, to give the dates with particularity, so that the several steps of progress could be accurately shown, and the changing phases of its development readily traced.

In the first ten chapters, the various topics arising during the early stages of the movement are discussed by the author; in the later chapters, the accounts of experiments in many cities and towns are given; while in the Appendices, in addition to much other material of general interest, these histories are brought down to as late a date as possible. The fact that the "introduction," or "preface," to a book is usually the last to be put in type, permits some final addenda to be here made, and affords an opportunity for the author to sum up his latest conclusions. Notwithstanding what may be said in this volume in regard to the omission of art training, the author, while deeply regretting this omission, as needless as it is unfortunate, still believes that the new movement for Industrial Education has wrought much good; and earnestly hopes that out of the discussion it has incited greater good is to result. From the clash of opinions Truth should emerge victorious.

It was believed when the first chapters of this volume were written that the art features of the new movement so successfully inaugurated in Massachusetts, would inspire and promote that Industrial Training movement which began to manifest itself as quickly as the success of the Industrial Art Drawing movement was apparent. It will be noted, however, that on the very first page of Chapter I of this volume a note of warning is sounded as to the danger threatening these art features if the new movement should fall under the direction of those who were ignorant of, or indifferent to, their development. It is with regret that the writer is compelled to admit that it is very evident in this year of 1890, when these lines are penned, that the people who are so fond of calling themselves "practical" have successfully strangled any possible "art" idea which might, perhaps, if let alone, have still survived under the shavings that littered the floors beside their carpenter benches, or the smutty particles of iron that flew off in blazing sparks under the blows of their blacksmithing hammers.

The beautiful work wrought in iron and ascribed to that painter who, at the bidding of love, left the forge for the easel, and who is known to fame as "The Blacksmith of Antwerp" and the carven work by the ancient and modern woodworkers of France and Italy, stand in perpetual witness that an exquisite art is possible to workers in wood and iron.

THE CULTURE OF THE AESTHETIC FACULTIES FORMS NO FEATURE IN MOST OF THE MANUAL TRAINING SCHOOL COURSES.

This failure of the art idea in the Manual Training Schools is so evident, that some of those who started enthusiastically with the Industrial Art Drawing movement, but were led away by the more sudden popularity of the Industrial Training movement to the hearty indorsement and support of the latter, begin to realize the evil they have helped to bring upon the most hopeful educational movement ever begun in these United States, and feebly point to a single manual training school in which,—thanks to the fact that the superintendent of that city was once thoroughly in touch with Walter Smith, and had mastered the underlying principles of art training which inspired the teachings of that great master,—some reachings out for æsthetic culture are indicated, as the ground for their hope that in the future, art training in manual training schools "must come as a necessity!" So, for ages, men have pointed forward to some anticipated Millenium!

Neither in the theories, wishes, or methods of the people who most actively advocate the Manual Training movement, can the present writer see promise of any valuable development or training of the æsthetic nature of the public school children of the United States, The "Industrial Training" and "Manual Training School" advocates are entitled to much credit for what they have accomplished, and there is much of value in the work they seek to do; but there is no evidence that they comprehend, or desire, any such art training as Messrs. Philbrick, Perkins, Smith, and their wise and enthusiastic coadjutors, hoped to add to the educational forces of America.

In the massive stone building* which stands opposite the room in which these words are penned, stored in great cases of iron and glass stretching in long vistas through far-reaching halls and galleries, are thousands upon thousands of "object lessons," which teach, if anything can be taught, that in mechanical ingenuity the inventors among the American people have reached a perfection and a productiveness which would seem to indicate that there was no special lack among American youth of ability to think and to express their thoughts in wood and iron. That it is otherwise in all that relates to art, to the making of beautiful forms, to the giving to the products of industry the ineffable charm of beauty—a capacity common to many peoples in various lands—is too well known to need restatement. It was this deficiency which the men of 1870 sought to supply. Had those three men been spared to instruct and to inspire, it seems possible that the hopes they aroused might have met fruition.

These words are written in the hope that if there remain among the Manual Training School advocates any who really desire to develop the artistic capacity of American children, they may be led to examine the methods and tendencies of the Manual Training movement as at present existing, with a view to finding out how this lack may best be supplied. To those who sincerely seek to promote in the community a knowledge and love of Art, and to develop in American children a capacity for Art creation, and for the application of Art to Industry, these words are addressed, in the hope that they may be led to investigation and to action.

The prolonged study of these schools, as well as of the arguments of Manual Training advocates, incident to the preparation of this volume has led to the reluctant conclusion that, however desirable the development of Art among the American people may be, no such development is directly, or indirectly, to be anticipated from the efforts of the advocates of Industrial Education; while the methods of the Manual Training Schools are, of necessity, mostly occupied with the kind of drawing specially adapted to mechanical processes.

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* The United States Patent Office at Washington.

It is to be remembered that Professor Woodward, the foremost advocate of the Manual Training School, has never made any claim for it on the ground that it was an Art Training School. He bases the claims of this class of schools on far other grounds. It is rather to those who began as advocates of "Industrial Art Training," and who, perhaps, finding "Industrial Training" more immediately popular, and seeing that it was the outcome of the first movement, hoped to blend the two, that any artistic claim for the latter movement is to be attributed.

In the early chapters of the present volume it was argued that the two ideals and methods were by no means incompatible, nor is there any insurmountable reason why they should be; but it remains that, almost without exception, the training in these schools under the influence of the Industrial Education ideals, is away from art, and more and more towards mechanics; while the advocates seem long since to have forgotten that there was ever any idea of introducing any art training in the public schools,—the drawing they would have taught is practical, mechanical. All this is good, excellent for the purpose sought, but it is *not*, and has nothing to do with, "Industrial" or any other "Art."

WHEREIN THE TECHNICAL INDUSTRIAL ART SCHOOL DIFFERS FROM THE TYPICAL MANUAL TRAINING SCHOOL.

In the "Preliminary Papers" with which the preceding volume of this Report opens, the pressing demand in this country for the training of a class of Art Designers, and of Artistic Artisans, if the manufactures and arts of the United States are, in artistic excellence, to be kept abreast of those of the rest of the world; has been very fully set forth.*

It is there shown that such elementary art training as must form the basis of all artistic development can be given in the public schools.

The subsequent opening of technical Art Trade Schools ;—schools in which the practical application of designs to manufactures is taught, and skill in the special manipulation requisite for such art work is imparted, must follow as a logical necessity. Such schools may be simply an additional department of the Schools of Design,

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*See Part I, page CLXV, also the paper on "The Technical Education of a People" and those immediately following: See page LXXXIX *et seq.*

or wholly separate from, and supplementary to, such schools; but, however acquired, a practical knowledge of the actual relations that necessarily exist between the Artist Designer and the Art workman must be possessed by each of these producers, before full success in artistic production can be achieved; and by "full success" is implied not only artistic excellence but commercially profitable production.

Failure to realize this need and adequately to provide such requisite facilities, sufficiently accounts for the comparatively slow progress made in the development of art industries in the United States; and, also, for the frequent criticisms made by the manufacturers that the designs offered by pupils of the Schools of Design, though often very attractive in appearance, are apt to prove impracticable.

In the American factories which do put forth successful art products, the designs, *and* the workmen, will still very commonly be found to be of foreign origin! It is not very creditable to the art capacity and productive enterprise of Americans that they should have been so slow to make practical application of the lessons so profusely set before them by the lavish displays of beautiful art works which were shown at the Centennial Exposition by the Art Producing Nations of the world! Commercially, that Exposition has been most advantageous to those foreign art makers; since it trained for them a whole nation of appreciative and liberal buyers!

It, indeed, opened the eyes of Americans to the beauty of Art work, but its influence in developing here a race of native art workers, has not been as potent, or as immediate, as was hoped by those who then urged the definite training of the children in the public schools, in the elements of Art knowledge. It is because this effort for the artistic instruction of the public school children has been so effectually diverted into their mere industrial training, that so much is said in this volume in protest against the omission of artistic training in the schools.

Intelligent efforts in the right direction have not, however, been wholly wanting by American Producers; and, in many directions, manufacturers have profited by the lessons so plainly set in Philadelphia; as is fully shown in the very generally increased artistic attractiveness of native furniture, pottery, glassware, carpets, etc., subsequent to the Centennial year.

The kind of practical art instruction that is needed, after the pupil has received elementary art training in the public schools and has learned to draw passably well, is well exemplified in a notable school in Philadelphia; in which the pupils are, as a basis for any specialty, thoroughly grounded in the elements of art and of design.

The post-graduate instruction that is needed to fit the art student to practically apply his art knowledge in a chosen specialty of manufacture is here well provided for in a single direction, and the fully equipped textile department of the Art School of the "Pennsylvania Museum and School of Industrial Art," presided over by Mr. L. W. Miller, Art Master and Principal, furnishes an admirable example of the class of Art Trade Schools which are needed for the post-graduate instruction of the pupils of the usual Schools of Design.

It is earnestly to be hoped that the Potters of this country will follow the excellent precedent here set by the Textile manufacturers, and will establish in this School, under the competent supervision and direction of Principal Miller, a department equally well equipped for the training of skilled art designers and artisans in the beautiful art of the Potter.

As if to illustrate the present rapid development of industrial art in this country, it happens that, while these pages are not yet out of the hands of the printer, I am enabled to record the fruition of the wish expressed in the preceding paragraph; since I am indebted to Mr. Alfred Day, the secretary of the association, for the announcement that the United States Potters' Association, during their fifteenth annual meeting held in Washington, D. C., January 20th and 21st, 1891, have by a unanimous vote, taken the necessary steps, by the appointment of committees for that purpose, to provide for the opening of a Pottery School, comprising the three important branches of Chemistry, Modelling, and Designing of Pottery, to be a department of this art school in Philadelphia, similar to the textile department; and to be, like that, under the direction of Mr. L. W. Miller, principal of the Art School of the "The Pennsylvania Museum and School of Industrial Art" in Philadelphia. This is a decided step in advance, and one that will be welcomed by all who desire the artistic development of American manufactures.

For this auspicious result credit is largely due to Mr. D. F. Haynes, the well-known potter of Baltimore, whose enthusiasm and persistence in the endeavor, by promoting educational training in art, to develop artistic knowledge and skill among the workers in ceramics, seems, at last, to have been rewarded. It is due to his fellow members of the Committee on Design to record that his efforts have been by them cordially seconded.

The admirable exposition made at the meeting of the previous year by Mr. Miller, in a careful address in which the direct bearing and practical possibilities of such a school were ably presented; and which was printed in the report of proceedings of that year, was, doubtless, largely instrumental in leading the gentlemen of the Potters' Association to a unanimous agreement as to the wisdom of establishing the proposed school.*

Similar scientific Art Trade Schools, adapted to the needs of local industries, should be established in every manufacturing centre throughout the country.

Until such schools, or some equivalent methods of giving such instruction, are prevalent; any very notable increase of activity in the production of artistic manufactures in the United States by American designers and artisans, hardly need be anticipated.

Such special instruction has for many years been given to a limited number of designers by the Lowell School of Design, now attached to the Massachusetts Institute of Technology. The pupils who go from this school directly to the designing room of the factories, are here taught to work out their own designs in the dyeing and weaving of textiles.

The "New York Institute for Artist Artisans," under charge of Professor John Ward Stimson, formerly principal of the Art School of the Metropolitan Art Museum, also furnishes an admirable model for such a class of art schools as are imperatively needed if the art industries of America are to be successfully developed.

Looms for practice in weaving, and kilns for firing pottery, have latterly been placed in several Schools of Design; as will appear in the account of these schools to be given in a later volume of this Report. These are beginnings in the right direction for the development of practical Art Producers in American manufactories, but the actual manipulation in the practical working out of their designs in the material for which they are made, must occupy a far larger part of the time required for graduation from these schools, than is at present given, before the schools can be credited with affording such facilities as are requisite for that thorough practical training which is needed to make competent art designers and skilled art workmen.

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* "The Lesson of the Hour for American Potters." An address delivered by invitation of the Committee on Design, before the American Potters' Association, at its annual meeting held in Washington, D. C., January 22nd, 1890, by L. W. Miller, Principal of Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa., Pp. 24.

As the typical Manual Training School of St. Louis, offers post-graduate instruction in the Mechanic Arts to the pupil of the public grammar schools; so these Schools of Design, and Technical Art Trade Schools, would provide the requisite post-graduate training to the High School pupils who had been taught, through all the lower grade schools, elementary art drawing. The mere statement of the kind of art instruction given in these higher art schools must suffice to show clearly that the Manual Training Schools, so fully described in this volume, do *not* meet the needs of Industrial Art Training.

ANNUAL MEETING OF THE DEPARTMENT OF SUPERINTENDENCE, FEBRUARY, 1891.

The annual meeting of the Department of Superintendence of the National Educational Association for 1891 was held in Philadelphia during February 24th, 25th, and 26th. A large number of State and city superintendents, and other leading educators were in attendance. The sessions under the skillful direction of the President, State Superintendent Andrew S. Draper, of New York, were unusually spirited and interesting.

SUMMARY OF PROCEEDINGS.

On Tuesday evening Dr. Harris, the Commissioner of Education, read a thoughtful paper on "The National Educational Association; its Organization and Functions," and suggested several new fields for its activities.

On Wednesday evening the Chancellor of the University of the State of New York, Hon. George William Curtis, gave an address on "The Public School and Civil Service Reform," in which the speaker, with his wonted charm of expression, urged that the selection of teachers for the public schools should be freed both from political and personal influences. On the evening of the 26th a brilliant reception at St. George's Hall was given by the City Board of Education to the visiting superintendents.

The day sessions of Tuesday, the opening day of the meeting, were given to a consideration of "Compulsory School Legislation" in the States of Illinois, Wisconsin, and Massachusetts, and led to animated discussions showing some wide divergence of opinions among educators from different parts of the country. This was followed by a paper on the "Qualification and Supply of Teachers for City Public Schools." Superintendent N. C. Dougherty, of Peoria, Illinois, Mr. George H. Martin, Agent Massachusetts School Board, and Superintendent William E. Anderson, of Milwaukee, Wisconsin, were the authors of the formal papers on the above topics in the order of their names as here given.

The day sessions of Thursday, the final day of the meeting, opened with the reading of a carefully prepared paper entitled "Universities and Schools," by Superintendent Oscar H. Cooper, of Galveston, Texas, in which the distinctions between the American Academy or High School, College, and University, were sharply defined. The mere aggregation of two or more professional schools to a small college is not, it was asserted, in itself, sufficient to change its character to that of a real University; and the speaker seriously queried whether even Yale, or Harvard, or Columbia, with all their growing schools and departments, had yet reached the full standard implied in European countries by the term University. He in no respect disparaged or minified the value and usefulness of the small colleges, which have a most useful field of their own.

A spirited discussion followed, participated in by President H. E. Webster, of Union University, Schenectady, New York; Professor S. G. Williams, Professor of Pedagogy. Cornell University, Ithaca, New York; President Nicholas Murray Butler, of the College for Training of Teachers, New York City, and others. The clear cut, concise, philosophical exposition made by President Butler in his brief remarks commanded unusual attention and approval.

A paper entitled "What present means are available for the preparation of teachers for their work?" was read by State Superintendent Henry Sabin, of Iowa, who was subsequently elected President of the Department for the ensuing year. The discussion of this paper closed the literary proceedings of the meeting.

This brief summary of the proceedings of the annual meeting, of general interest to educators, is here given before the fuller report of the discussion on Art Training which took place on Wednesday, in order to show the relative importance accorded to the topics strictly germane to this Report. It will be observed that, of the three days during which the meeting was held, the sessions of one entire day, Wednesday, were given to these topics, showing a remarkable change on the part of educators in their estimation of the relative importance of educational questions.

THE DISCUSSION OF ART TRAINING IN THE PUBLIC SCHOOLS.

For the session of Wednesday, the 25th, the topics of "Art Education" and "Drawing" were announced. The Hon. James Mac Alister, LL. D., late Superintendent of the city schools of Philadelphia, now President of Drexel Institute, opened the discussion with an important and suggestive paper on "Art Education in the Public Schools."

In this paper, the comprehensive purposes necessarily included in the functions of the public schools of the present time are so clearly stated; the relation of Art Education to the other essential studies is so well defined; while the inevitable necessity of the new movements affecting the public school training of future citizens, if our institutions are to be preserved, are so emphatically set forth; that, did space permit, I would gladly adopt the paper in its entirety, as a most fitting and artistic introduction to the present volume, which is so largely given to an account of these new movements and studies. This paper, also, in its discussion of the art possibilities incident to this proposed training in the public schools, so links itself to the purposes and aspirations set forth in the first volume of this Report that it suggests and illustrates the underlying unity which, it is hoped, will characterize and pervade this Report when its several volumes are finally completed. It is significant of the varying phases which accompany a rapidly advancing civilization, that the very arguments on which in the past the opening and support of common schools were based, while, at the same time, the studies to be taught in them were limited to little other than those which should enable the future voting citizen to read the laws, and which, in later years, have been urged against the introduction in these schools of new studies, should be those on which this speaker most relies.

PRESIDENT MAC ALISTER'S PAPER.

Dr. Mac Alister's opening words which here follow give the keynote of his paper:

The social development of the last half century shows a steady growth in the recognition of the public school as one of the most important institutions of modern society. To the thoughtful man the future presents a number of social problems of the gravest import. Individual freedom from class and proscriptive tyranny has, in a broad sense, been secured. Public opinion, the aggregate of the majority of individual opinion, has become the sole basis of social order, and hence the binding force in modern society is what the majority of the people think or believe. We need to bring the full significance of this fact before us, and to consider that under this social dispensation all the baser elements of human nature are given as free play as are the higher elements, and that no man is restricted of his personal liberty until he encroaches upon the liberties of others, before we can adequately comprehend the supreme importance of public education to the modern state.

Referring to a paper by John Fiske, in which that writer points out "how the long period of mental plasticity, that is, the educational period of infancy, youth, and adolescence," through which the human being passes, secures the possibility of the progress of humanity, Dr. Mac Alister, says:

> The social condition of man has now reached a high degree of complexity. This social condition can be protected, can be properly developed, only so far as the provisions for education provide for the training of youth for their social duties and responsibilities. With just as much thoroughness, with just as much care, we need at the present time to train our children to all that makes for high and noble living, as the Greeks trained for the conditions existing in the Greek state, as the Romans trained for the conditions existing in the Roman state, etc. So, also, we must recognize the supreme importance of training in all that makes for the highest intellectual culture and refinement in human life.

After showing how the State rests on the intelligence and virtue of the citizen, Dr. Mac Alister calls attention to the fact that, for this very security of the foundations of the State, it is of the highest importance for the community to realize that the educational care of the State must be especially given to the poorest classes of its citizens, those least able or willing, if left to their own resources, or impelled only by their own desires, to educate their children.

> To state the problem in a few words, our duty is to so organize the forces that make for right living that they shall always be the dominant power in the social organism, and it is only when we come to recognize this condition as fundamental to all growth in human well-being that we can get a proper comprehension of what is involved in public education at the present time.
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> When the education of the people is looked at from this point of view, it is seen that its greatest power must be exerted where the dangers to the social organism are greatest, *i. e.*, among the very poorest classes. There is more need of the refining influences of the best education among the debased and neglected elements of population in our large cities than among the children of the rich and prosper-

ous; and hence the movement of the last few years to carry the most improved forms of our education among the lowest classes is an indication of the growth of public sentiment in the right direction, and is a feeling that will undoubtedly grow in strength as social problems are more carefully studied.

HOW COMMON SCHOOLS MAY BE THE NURSERIES OF TRUE PATRIOTS.

Referring to the movement for placing the national flag on the school house and using it as a means of inculcating patriotism, Dr. Mac Alister, after stating that in large cities the policeman was almost the only embodiment of governmental force of which the children of the poor have any personal knowledge, proceeds to show how the school itself may be made an efficient means of developing a true and intelligent patriotism.

What better instrumentality is there for inculcating in the minds of the young a respect for government and law than the school house? If we can lead the pupils to understand that the school house is provided by the State, is provided for all, without distinction of race, condition, or creed; if we can make the school house a place of delight, and if we can secure within the school house the right sort of instruction, the instruction that shall tend to develop all the highest and noblest qualtities of mind and heart, we shall then be fostering not simply a love of country for its past history and the heroic deeds of our ancestors, but we shall be fostering a love of country for what the country is doing for the children themselves in encouraging and in training them for the highest and best purposes in life. Then will the flag mean something personal to every child. Then will the Government be to him not simply an abstraction, but he will come to regard it as his own great helper and sustainer. I welcome, therefore, this nationalization of the school as one of the most important of the educational movements of our time.

If, however, we make the school the symbol of the State to the children, we must have taught in the schools all that the child requires to enable him to become a virtuous and useful citizen. I do not think there can be any gainsaying of this proposition. Indeed, it follows logically from the very establishment of a public school, and in our day when such broad responsibilities are attached to citizenship, the public school and its instrumentalities must be measured solely by its capacity to produce such citizenship.

The following statements showing the necessity of broadening the scope of public school instruction will be found based on reasons the very opposite to those urged, not only against any such enlarging of opportunities, but against any form of free public teaching, by the opponents of the public schools; such as, for instance, are represented by Mr. Bonham, in the chapter quoted from his work on "Industrial Liberty," in paper VIII of Appendix "I" of the present volume.

SUMMARY OF THE NEW EDUCATIONAL MOVEMENTS.

In a few sentences Dr. Mac Alister concisely sums up the various movements comprised in the new education, and asserts the absolute need of this development of the public school, as follows:

> Nearly all the States have limited the instruction that shall be given in public schools, and some confine it within very narrow bounds. But we are gradually outgrowing the narrow ideas of education of fifty years ago, and our more intelligent communities are already anticipating legislative action and are putting into their schools new subjects for study, new exercises, which have for their object the development of the higher powers of the pupils, and for bringing them into the closest possible relations to the social needs of the future. Look for a moment at some of the movements that are going forward at the present time for the broadening of public education. First we have the kindergarten movement, the recognition of the child in education, one of the most beneficent movements that has ever come into public schools. Then we have physical training, the recognition of the fact that the citizen to have a healthy mind must also have a healthy body. Then we have the movement for the study of elementary science, which has for its object the bringing of the individual into the closest relations with his physical environment, that he may be able to enrich the world by his conquests over nature; that he may, to use the words of Bacon, become the minister and interpreter of nature. Then we have the movement for industrial or manual training, which recognizes that labor is one of the conditions of man's existence in the world; and it is through understanding labor and putting thought into labor, that man is brought more completely into sympathy with his fellows. Then we have the study of history, not simply as the record of man's military conquests, but rather as showing the steady development of the idea of brotherhood among men. And then, in addition to all these, we have art education, in some respects the most important of all the new studies, because its influence tends to enrich the mind as a whole through the development and training of its highest faculties.
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> ### PUBLIC EDUCATION PREPARES FOR CITIZENSHIP.
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> Now, cavil as we may against these new studies; argue, as many persons do, upon the limitations which are, or ought to be, imposed upon the State in education, all these features must come into the public schools, and in no niggardly way. There is no help for it. They must come in on the broadest possible basis, or there is danger that the present tendencies of social progress will miscarry. That their introduction into the schools will revolutionize much of our existing education cannot be denied, but we may lay it down as a fundamental and incontestable proposition that modern social conditions demand these two things: First, the highest order of citizenship; and second, that public education must prepare for such citizenship, no matter at what cost.

All thus far has been but the preparation for his statement as to the relative importance that should be given to art education in any scheme of public instruction. Much that follows will be found in full accord with the suggestions advanced in some of the "Preliminary Papers" of Part I of the present Report; and it is very gratifying to the author to find his judgments confirmed by so experienced an educator.

"ART EDUCATION IN THE PUBLIC SCHOOLS."

Dr. MacAlister introduces the special topic assigned him, thus:

I have detained you with these remarks because, in opening for discussion the subject assigned me, "Art Education in the Public Schools," it has seemed desirable for its right understanding that we should consider it not simply as a single subject or specialty in education, but rather in the larger aspect of one of the branches of general education that is now demanded by the social conditions of our time. It is only by regarding the subject in its broadest relations that we can rightly consider how it should be treated in the schools.

Of the new subjects referred to, art education is the one least understood, and yet it is the one that in many respects is the most important. There is no other subject in education that touches the whole of education at more points than this, or one that bears more directly upon all that ministers to the best interests of the individual and of society. I am aware that many will regard this as far too inclusive a statement, and yet the history of civilization shows that the arts which deal with form and color have been at once of the highest value to man's utilitarian necessities, to those desires which nothing but the beautiful in nature and in art can satisfy. As a people I think it will be admitted that we are deficient in general art culture, and I do not think it will be denied that, in consequence, we are losing no small part of our intellectual heritage. This will not always be so. The indications are many that art is to have a new development in America, and on a new basis—the basis of a broad humanity. The putting of industrial training into the schools is a great step in this direction, and will surely give a higher idea and a nobler purpose to the labor of common life. The putting of art education into the schools side by side with industrial training will not only give dignity to labor, but also permit the human feeling born of labor to find adequate expression.

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In the great hurry-scurry that is going on in the race for wealth, people are losing sight of the fundamental ethical principles that hold society together, and are making a pretence of living. The pulpit is not to-day as strong a bulwark against this social tendency as the public school. Now, art education, which is the study of beauty as the highest truth in nature and in human life, can be directed powerfully against this social demoralization, and hence we should be prepared to advocate art education in the schools as one of the most powerful of moral forces. Goethe says: 'The beautiful is greater than the good, for it includes the good and adds something to it. It is the good made perfect and fitted with all the collateral perfections which make it a perfect "thing."' While we are broadening our system of education on the utilitarian side, we must not forget that the right enjoyment of life—that is, the exercise of the higher faculties—is as much a function of living as earning one's daily bread; and for our education to be useful, in the true sense of the term, we can not ignore the training of the æsthetic faculties, as much for moral as for practical ends.

VALUE OF FORM STUDY AND DRAWING.

I have felt constrained to emphasize this aspect of the subject as of supreme importance at the present time, because in the general introduction of form study and drawing into the schools there seems to prevail an idea that their chief value consists in subserving industrial ends, or as aids to other branches of instruction, particularly to the study of natural science. The great value of form study and drawing in industry, as well as their great use in educational training, is admitted, but form study and drawing as the basis of art education need to be considered in much broader relations than their application in these directions.

Now, art in form and color is not an abstraction. It is something very tangible. It is man's creative work with material things; work in which he expresses himself, his power, his knowledge, his feelings, his ideas for the use and the enjoyment of others. With every child there is born some degree of this power of individual creation, and closely allied to it is another and complimentary mental power, that of curiosity, or observation, and it should be a principle in all general education to lay hold of these two great instinctive or natural powers and give them free play in the training of every child. True art education distinctly recognizes these two mental powers in the child as the starting point, and seeks to stimulate and direct them so that they shall act and react on each other, to the end that they shall ultimate in the creation of beautiful things, not so much for the gratification of selfish or individual desires as for giving joy to others, thereby establishing social relations between the creator and his fellows. The method of training for this end has a dual aspect. On the one side the child is led, through the exercise of his observing powers, to discover that beauty is the supreme truth in all material things—in fact, that there can be no beauty devoid of truth—and, on the other side he is trained to express his observation of the beautiful in creations that shall minister to the use and enjoyment of man. It has been truly said that sharing in some common enjoyment begets a more friendly feeling towards others than sharing in the same kind of knowledge.

Not until art education is viewed in the broader aspects can the subject take its rightful place in public education at the present time. For not until the psychological conditions for the training of the child are comprehended can a method of instruction in art suitable to children be devised, and not until its applications in social life are comprehended can the object of art in education be understood.

It is not necessary to dwell upon the fact that this view of art education does not present the subject as in any way antagonistic to its applications to industry, or in other subjects of education. In fact the more the subject is studied from this broader point of view the more will it be seen that its practical applications both in industrial training and in general educational training are greatly increased, in that there is brought to its applications in these directions the creative powers of the pupils, enriched by the study of the beautiful, which is the life-giving principle in all industrial work, and which is alive to the highest creation in all intellectual education.

A PERTINENT QUESTION.

With these points in mind, and in view of the wide introduction of drawing into the schools, a pertinent question arises here: Is the study coming into public education on the basis of art, or is it coming in on the basis of utility?

Dr. MacAlister regards the present tendency shown in the teaching of drawing as in the right, that is, the artistic, direction. It is to be hoped that in this he is correct; for, as we shall have frequent occasion to observe, the Manual Training School influence seems, in many of these schools, to be, to say the least, indifferent to any possible art development.

He comments at some length on the change for the better in the methods and purposes of teaching drawing, which he considers were, at first, limited to purely utilitarian and industrial considerations. The prominence at first given to these arguments, it may, perhaps, be permitted to the present writer to observe, was not due to any failure to appreciate the beautiful, or to any indifference to the higher ends and purposes of art, on the part of the three great pioneers in the movement for putting drawing in the common schools; but arose from the fact that, owing to the lack of any knowledge about drawing on the part of the general public, it seemed necessary first to press on their attention the utilitarian values of the new study, in order to secure for it any consideration whatever. This could be done with the more heartiness because it was clear that when once some elementary knowledge of drawing should be generally disseminated throughout the community, its higher purposes would gradually but surely make themselves felt, as the result has abundantly proved. There is little doubt, however, that it was owing to this necessity, on the part of the first advocates of the new study, for emphasizing the utilitarian arguments, and thus of apparently ignoring all its art qualities, which aroused an antagonism to the movement among many artists, and art lovers, who, doubtless, failed to realize the importance of securing a beginning, however small and incomplete, in the work of instructing a community so wholly ignorant of art.

The speaker, after expressing his satisfaction at the change referred to, remarks:

But it will be a serious mistake to say that, because the method of teaching drawing has been changed, so as to make it the expression of ideas derived from the study of objects or things, the problem of art education in the schools has been solved. In fact, it may be said that with this change of method the real problem in art education confronts us from a new and a broader point of view than when we were dealing with the subject simply from the standpoint of drawing. Having reached the stage where drawing is regarded as but a means for the expression of form ideas derived from the study of objects, the vital point in the instruction now turns upon this, What kind of objects shall we give the children to study for the development of the ideas to be expressed? It is not unfrequently claimed that the interest of the child should be the guiding consideration here. That the interest of the child should be secured is not to be questioned, but it would be a great mistake to assume that this should be the only consideration.

This last sentence may be commended to those educators who in their zeal for promoting kindergarten, or manual training, seem often to have ignored all other considerations in their endeavors to secure the spontaneous interest of the child; forgetting, it would appear, that if this curiosity, the common characteristic of infancy and childhood, were in itself a sufficient guide for the child there would be no need for teachers. Is it not in the wise direction of this awakening and growing curiosity that the whole province of true education is comprised?

Is not this guidance the very business of the true educator?

SIGNIFICANCE OF THE TYPICAL FORMS OF BEAUTY ALIKE IN WORKS OF NATURE AND OF MAN.

After pointing out that the study of nature for the purposes of art is a widely different thing from the study of nature for the purposes of science, he shows that the aim of this proposed training is—

To develop the appreciation of the highest beauty in nature which is realized only when it is perceived that the various objects in nature are fashioned upon certain type forms which express unity and purpose as the highest truths in nature—truths that transcend all material manifestations and witness the supreme, eternal power that lies back of, and gives life to, nature. The natural objects are very few that express this truth, this beauty of nature in all their details. They become beautiful only as they are seen in their typical relations. It is one of the functions of art to present the objects of nature not in their accidental, but in their typical relations; in other words, to interpret nature in her highest aspects, not simply to imitate her in her details. Hence the art study of nature becomes largely subjective, and is very different from the objective study of nature for the purposes of science.

If this point be conceded, the question arises, What are the typical forms that the study of nature for art purposes reveals as the supreme content of nature? They are very few and they are very simple forms—the sphere, the cube, the cylinder, the ellipsoid, the ovoid, the prism, the cone, and the pyramid. The wonderful variety of forms which are observed in the objects of nature are but modifications of, or are derived from, these typical forms. These typical forms, therefore, should be regarded as truths of form in nature; just as distinctly as gravity is regarded as a truth of power of nature.

Now if it be one of the functions of art to interpret beauty of form in nature, this beauty will be perceived in its highest aspects only as it is seen to be related to the highest form truths of nature. Hence we are brought to the conclusion that, as the typical forms referred to are the embodiment of the highest form truths of nature, so these are the forms that should be used in our elementary instruction in order to lead the children to see and to realize the highest forms of beauty in nature.

BEAUTY IN CREATIVE WORKS.

But the study of beauty in nature is only one phase of art education. The study of the beautiful in the creative works of man is as much a feature in art education as the study of the beautiful in nature. The study of beauty of form in man's art work reveals the fact that it, also, is based upon the same typical forms that are found to be the embodiment of the highest beauty of form in nature, and it is the manner in which man has utilized these forms with his creative imagination in the production of works for the use and enjoyment of mankind, that gives to his art works their highest character and significance. Thus we are brought to the final conclusion that for art training, which is to include the study of the beautiful in nature and the beautiful in art, we must recognize that the type forms of the sphere, the cube, the cylinder, the ellipsoid, the ovoid, the prism, the cone, the pyramid, are the embodiment of all beauty, whether in nature or in art, growing out of the truth of form. In nature, the eternal power that lies back of nature invests these forms with life, thus giving the highest beauty to nature. In art, man, with his creative imagination, invests these forms with humanity, which is the very culmination of beauty in art, and thus we see that form beauty in nature and form beauty in art are in their ultimate analysis one, and rest upon the same eternal truths of form.

If I rightly apprehend the instruction in form study and drawing that is now finding its way into the schools, it is based upon the distinct recognition of these type forms as the fundamental verities for the training of children to perceive truth and beauty of form in nature and in art; and it is the aim of the instruction to so connect the study of these typical forms with choice selections of natural forms and fine examples of art forms that the children may be brought, through the legitimate and happy exercise of their observing and creative powers, under the influence of the beautiful, as the highest truth of nature and of the art work of men.

HOW THE KIND OF ART EDUCATION HERE DESCRIBED MAY BE SECURED.

Dr. MacAlister then proceeds to offer a few general practical suggestions for promoting through all grades of the public schools the kind of art education he has set forth:

This is not the occasion for the presentation of details for carrying out this important work. This task may be left to the many able directors of drawings who in several of our leading cities are endeavoring to give to the form study and drawing the broad character here indicated, and who are laboring against great obstacles, arising from the general misconception of the subject which exists in the public mind and in the minds of some who are directing the schools. It seems the proper place, however, for the consideration of a few points whereby the instruction in the schools may be made more efficient.

THREE IMPORTANT CONSIDERATIONS.

To this end one fact must be distinctly recognized as fundamental for any substantial and permanent success—that the instruction in the grades below the high school must be given by the regular class teachers. This is so obvious a fact in efficient school management at the present time as to need no argument. Flowing from this fact, however, are three very important considerations:

First. A course of study should be prepared in which the sequential development of the subject through all the grades should be clearly presented. But few of the regular teachers have had any training in this subject. They need, therefore, to have it so presented that they may be able not only to become acquainted with the features to be taught in their respective grades, but also to see the unfolding of the subject through all the grades. Not until the grade teachers are able to take this comprehensive view of the work, not until they see that the study is recognized as an organic feature in the general course, can they be expected to take other than an exceptional interest in it.

Second. The instruction in this subject in the schools should be under the direction of special instructors or directors in art education. These special instructors should be broadly educated persons. It is not enough that they have received training in technical art work. They should also be familiar with educational methods, with the general school conditions that surround the teaching of art in the public schools; and then, above all, they should be able to interpret the work in its principles and methods to the grade teachers as well as to justly criticise and supervise their work.

Third. The schools need to be supplied with more objects for the children to study. The models of the type forms that are now being so generally introduced should be supplemented with casts of natural forms artistically treated, in order that the children in their individual study of natural forms may see good examples of the art rendering of nature, and also with reproductions of fine examples of historical ornament, both in relief and in color, that the children may have opportunities to study good examples of art work applied to common life.

In addition to these reproductions there should also be introduced reproductions of choice vase forms from Classic, Renaissance, and Oriental art. Man's realization of pure beauty of form and color has, perhaps, found its most complete expression in fictile art, and as these vase forms can be shown to be developments under the influence of the feeling for beauty from the type forms we have been considering, and as they are full of historic associations, they will greatly interest the children, and can, therefore, be studied with much greater profit for purposes of object drawing than the miscellaneous objects possessing no distinct elements of beauty that are too frequently placed before them.

A REAL ART DEVELOPMENT POSSIBLE IN AMERICA.

With well considered courses of study in art education, with the schools supplied with suitable materials and objects for study, with proper directors of art teaching in the schools, we should see, I believe, a real art development in this country unexampled in the world's history.

And all this is possible. Upon you as School Superintendents devolves this important work. You have it in your power to lead this people to a right understanding of what art education means in the schools, where the people are taught to show how intimately, how organically it is connected with all that makes for true manhood and true womanhood—how it may elevate all manual work and make it an expression of right thinking and noble living.

After an eloquent reference to the art creations of the past in historic countries and to the possibilities offered by our system of public education for an art development in this country, which we have thus far neglected, the speaker thus closed this striking paper:

With the introduction of industrial training we are recognizing manual labor as concreting human thought in the broad interests of humanity. In introducing art education we are recognizing that the beautiful is not only the supreme truth in the material world, but that it is also a part of the supreme truth in the moral world, and that so far as it enters into human life it is a Divine influence that makes for righteousness among men.

The love of the beautiful, therefore, should be one of the fine flowers of our public education, and when art education shall be so incorporated into the schools that its rich, benign influence shall permeate the life of the whole people we may then write over the door of every American schoolhouse these inspiring words of Schiller:

"Create the beautiful, and seeds are sown
For Godlike flowers to man as yet unknown."

Superintendent Balliet, of Springfield, Massachusetts, on rising to open the discussion of this paper voiced the judgment of the audience as he said that the subject had been presented to this department as never before—

"Art is rooted in prehistoric man, and the love of the beautiful is the outgrowth of the useful." "Art is democratic and can reach every being, every child." "Science must underlie art." "If you want to cultivate art education you want to put it into the souls of teachers." "You can not have art education as long as you have cheap teachers,"

were a few of his telling sentences. Mr. J. H. Hoose, principal of the Normal School of Cortland, New York, announced his belief in art education and in the cultivation of spontaneity in the child. The discussion, owing to the lateness of the hour, was unfortunately limited. A paper on "The Highest Office of Drawing" was then read by Mr. Frank Aborn, teacher of drawing in the public schools of Cleveland, Ohio.

The speaker began by stating, in effect, that genius was an educational product; and proceeded to illustrate the value of language as the means of education. The following sentence in which his special topic is set forth must serve to exemplify this interesting paper:

> Drawing is the language of form, and in its employment as a means of recording mental images, describing imaginary aspects of imaginary objects, it attains its highest office.

Mr. Charles E. Gaston, city superintendent of the schools of Yonkers, New York, held that the ideas pointed out by Dr. Mac Alister and Mr. Aborn, could only be realized through thoroughly qualified teachers.

As the admirable paper by Dr. Mac Alister sums up the conclusions reached after years of wide experience by one who was early identified with the movement for introducing drawing in the schools, who has also been ever ready to welcome such new experiments in education as are herein recorded, it has seemed desirable, even at the risk of unduly expanding this introduction, to include such portions of this paper as are here given in connection with this brief account of the proceedings at the annual meeting of the "Department of Superintendence." It is not without significance that one-third of the time allotted to this meeting of leading educators should have been given to a consideration of these topics.

The papers read and discussions held on the other topics considered at this meeting, together with the records of the routine business, and of the election of officers, will doubtless be duly given in the official report, issued annually by the Association.

At the close of Wednesday's session the superintendents in a body called formally at the City Hall upon Mayor Fitler, and then upon Mr. George W. Childs, at his private office in the Ledger Building. A cordial reception was given them in both places.

Much interest was shown by the visitors in the remarkable collections of literary and artistic curios and mementos, which make of Mr. Childs's office a veritable museum. The interest in education felt by Mr. Childs has long been evident in the columns of the Ledger, while in becoming a trustee of the Drexel Institute, and active in securing for this new educational force the coöperation of Dr. Mac

Alister, it was felt that Mr. Childs had more closely allied himself to the educators of the country. The generous hospitality extended on every hand to the visiting educators while in Philadelphia, and the constant supervision and kindly care for their interests so conspicuously shown by President Mac Alister were most warmly appreciated.

GEORGE WILLIAM CURTIS ON THE AMERICAN COMMON SCHOOL.

This account of the meeting of the School Superintendents of the country can not be better ended than by quoting the closing words of the eloquent address delivered on the evening of Wednesday, by Hon. George William Curtis, who from his "Easy Chair" has, unconsciously to himself perhaps, long proved a most winning and effective teacher to his countrymen.

It will be seen that his estimate accords with that expressed by Dr. Mac Alister, and adds one more to the notable utterances already quoted in this volume, showing how leading Americans esteem the common schools and their teachers.

In conclusion, Mr. Curtis said:

> The American public school is the true temple of the people. In every other branch of activity, in religion, in politics, in society, even in charity, we are all divided into sects and parties, and clubs and cliques. But in the public schools citizens of all sects and all parties, of all social sympathies and associations, meet on a common ground, with a common interest and a common purpose. It is the American temple dedicated to what we believe the essential condition of popular government, an educated people. The State gives its children knowledge as a two-edged sword, indeed, with which they may either slay themselves or carve their way to the highest human service. The public school merely opens to the child that opportunity of training and developing his powers, his character, and his aims, which comes from knowledge of human thought and achievement in all times and countries—an opportunity which he alone can improve for himself. The dignity, the influence, the power of the teacher's office, therefore, are incalculable. Is any public duty more transcendent than that of enabling the duties of that office to be discharged more satisfactorily, of constantly elevating it both in the respect of him who fills it and in the confidence and honor of the public for whom he holds it? Shall we spare any thought, any effort, any cost, to make the public school what we mean it to be, the corner stone of the ever loftier and more splendid structure of political liberty, and to impress upon the teacher by our sympathy and care the central truth of the school system, that the child is educated by the State, not that he may read and write only, but that the trained power and noble intelligence of the American citizen may tend constantly more and more to purify and perpetuate the American Republic.

THE COMING WORLD'S FAIR TO BE HELD IN CHICAGO.

In view of the amazing influence exerted in so many ways by the holding of the Centennial Exhibition at Philadelphia, in 1876, no one who takes interest in the educational, industrial, and artistic development of the United States, can regard with indifference the opening of the proposed exhibition to be held in Chicago, in commemoration of the discovery of the New World, by Columbus, four centuries ago. It is time for all who care for the interests of education to begin actively to prepare for this event, which possesses such vast potentialities for the industrial and artistic education of the people. Those for whom this Report is made, and to whom it especially appeals, have, in this coming exhibition, if they wisely avail themselves of the occasion, a great opportunity to test their experiments by a comparison with the results obtained in other countries; and also, to disseminate among their own countrymen a knowledge of their special purposes and methods.

It is to be hoped that the educators of the country, in every branch, will so co-ordinate their efforts and their exhibitions, as to secure the best possible results. In view of the manifest disadvantages of the contrary policy at the Centennial, it is earnestly to be hoped that the educational showing to be made at Chicago shall be so arranged as to admit of study as a whole, shall all be in the same building and conveniently accessible. It is certain that in many departments of Industrial production a great advance in art qualities, as compared with the showing made in 1876, will be evident; but it is also true that, while much has been accomplished, "much remains."

HOW AMERICAN SCHOOLS IMPRESS A VISITING EDUCATOR.

Many school superintendents and teachers in various parts of the United States will doubtless recall the pleasant visit paid them some eighteen months since by a very intelligent and courteous young gentleman from Australia, then on an educational tour of observation through the United States en route to Europe. Just as these pages are ready for the press advance sheets of the volume in which the results of the observations made by this pleasant visitor are set down, are received from his London publisher. Under the taking title of "Teaching in Three Continents" Mr. W. Catton Grasby, of Adelaide, South Australia, the visitor just referred to, gives a most interesting account of his journeyings among American and European schools, the value of which is greatly enhanced by the contrasts of likeness and unlikeness which, as he is thus able to show, exist between the systems, methods, and appliances of education characterising his own land of Australia and the several countries visited. As this close observer has taken in the whole province of elementary education he has, of necessity, given much space to the modern phases of school work which are recorded in the first two volumes of this present Report: Kindergarten, Drawing, Manual Training, Cooking, Sewing, etc., receive a full share of attention, and all who take note of the development of these studies will find much of interest and profit in the pages of the forthcoming volume, wherein this kindly observer from far over sea, has recorded his impressions and stated the conclusions reached by him after such a comprehensive study of the world's object lessons in the teaching of elementary schools.

The naive incidental glimpses of Australian school life, of the steps in the educational development of this other and later colony of Great Britain, whose progress till very recently was little known in this country, have, for thoughtful Americans, a freshness and interest of a peculiar character, since in these pages as in a magic mirror, we behold another America founded by colonists from Great Britain, and, "*mutatis mutandis*," can watch as it were glancing backward through a vista of two centuries, some of the steps of our own development from the condition of subject colonies to that of an Independent Nation.

There is noticeable throughout this record of travel, a breadth of view and a catholicity in the kindly receptiveness of new ideas and methods, on the part of the author, which, if it be but a characteristic common to the people of Australia, presages great things for the future of that people; and, certainly, whether it be a national trait, or a personal quality, adds charm and value to this record.

In so far as this book treats of the topics included in the present Report it forms an admirable supplement to the detailed statements here given, and I am glad of this opportunity to call attention in advance to a work which can hardly fail to greatly interest all those American educators who care for the common schools of the people.

AN IMPORTANT MEETING OF INDUSTRIAL EDUCATORS HELD IN BOSTON APRIL 8TH TO 11TH, 1891.

The rapid growth, importance, and extent of the present movement for Industrial Training in Schools was strikingly shown by the success of the first "Conference on Manual Training" recently held at the English High School building in Boston, Massachusetts, under the direction of "The New England Conference of Educational Workers."

This conference was attended by representative Educators from all parts of the country. Papers relating to the various phases of Industrial Training, were read and discussed at each session of the Conference, which was opened on Wednesday evening April 8th, 1891, and closed on Saturday April 11th.

The many rooms of the great building were filled with the Exhibitions of pupils' work, sent from both special and public schools of the City and from the schools of neighboring towns; while various institutions and public schools in other States contributed largely. Each day, classes of pupils at work under the direction of their teacher, were open for the inspection of the public. There were five such classes, comprising work in "Sloyd" Mr. Gustaf Larsson, Teacher, pupils from Brimmer School, Boston. "Light Wood Work," Mr. E. Schwartz, Teacher, pupils from Comins School, Boston. "Joinery," Mr. B. F. Eddy, Teacher, classes in turn on different days composed of Boys from Eliot School, Boston, from Somerville, from East Boston. "Cooking," Miss Barrows and Alice Little, Teachers. The Girls in these classes came in turn from Chelsea, Somerville, Hancock School, Boston, and from Brookline. "Sewing," Miss C. M. Coffin, Miss M. L. Boyd, and Miss C. F. Johnson, Teachers. Girls in turn from Somerville and from Brookline.

The Exhibition comprised specimens of pupils' work in Sewing, Drawing, Kindergarten and Manual Training. Manual Training work was sent from Wilmington, Delaware; Philadelphia; Pratt Institute, Brooklyn, New York; Montclair, New Jersey; Schools of Washington, D. C.; Chicago Manual Training School and from the Massachusetts Institute of Technology.

This conference thus gave to the public the opportunity to listen to the theories of the advocates of the new methods; to see the pupils at work in the various occupations and to examine in the collections on view, the results of their work; and thereby furnished opportunity for a very complete study by the community of the claims, practice and results of the new methods.

The first session of the conference, on Wednesday evening was opened by Superintendent Seaver of Boston, chairman of the executive committee, who introduced as the presiding officer of the evening Dr. Eliot, a former Superintendent of the schools of Boston. The Governor of the State, and the President of Harvard University, gave addresses, followed by Superintendent W. B. Powell, of Washington, D. C., and others. Governor Russell justified his own knowledge and interest in the movement by stating that it had been his good fortune to be chosen one of a committee to establish a course of instruction for the Manual Training School of Cambridge, Massachusetts,—the generous gift of Mr. Rindge to the community—and afterwards to manage and control it. This school was founded for the benefit of the children of the poor rather than of the well to do. The Governor stated that the results of the training given in this school had led him to suggest to the Legislature, in his Inaugural address, that the time had now come when such training should be made a part of the public school system, not compulsory but optional to the pupil, and he expressed the opinion that this would soon be done.

General Francis A. Walker, President of the Institute of Technology, whose interest in this movement has been long shown was the President of the Conference.

The list of speakers with their topics, and the brief statement concerning the Association which planned and held this significant meeting, are taken from the official announcement made by the Association. Want of space prevents a fuller account of this interesting convocation; this reference to which, given here because it is the latest public demonstration by the advocates of manual training, and marks decided progress, must also be the final word to be added to this volume.

CONFERENCE ON MANUAL TRAINING, HELD BY THE NEW ENGLAND CONFERENCE OF EDUCATIONAL WORKERS, ENGLISH HIGH SCHOOL, BOSTON, APRIL 8TH, 9TH, 10TH, AND 11TH, 1891.

PROGRAMME:

Wednesday, April 8th, 1891—*Evening.*

8:00. Addresses by Dr. Samuel Eliot; His Excellency, Gov. Russell; Chas. W Eliot, President Harvard University; Mr. Wm. H. Lincoln, Hon. C. T. Gallagher, Gen. Francis A. Walker, and others interested in manual training.

Thursday, April 9th—Morning.

Introductory Address; Gen. Francis Walker, President of the Conference.

10:00. Manual Training as an Inspiration to Mental Development, Prof. R. H. Richards, Massachusetts Institute of Technology. Discussion.

11:00. The Relation of Sloyd to Gymnastics, Dr. C. J. Enebuske, Director of the Boston Normal School of Gymnastics. Discussion.

11:30. The Educational Value of Manual Training in the Public Schools, Prof. Felix Adler, New York. Discussion.

Afternoon.

3:00. The Kindergarten and the Public School, Prof. Edmund J. James, University of Pennsylvania. Discussion.

4:00. The Kindergarten in Relation to Manual Training, Miss Laura Fisher, teacher of Kindergarten methods, Boston Normal School. Discussion.

Friday, April 10th—Morning.

10:00. Art Education in the Public Schools, James McAlister, President Drexel Institute, Philadelphia. Discussion.

11:00. The Language of Form, Prof. Charles W. Larned, United States Military Academy, West Point. Discussion.

Afternoon.

3:00. Seven Years of Manual Training, H. H. Belfield, Director of the Chicago Manual Training School.

The Observed Results of Manual Training, Prof. W. S. Chapin, Harvard University.

Means and Methods in Manual Training, C. R. Richards, Director of Mechanic Arts Department, Pratt Institute, Brooklyn.

An account of the Manual Training Work in Springfield, George B. Kilbon, Director of Manual Training School, Springfield, Massachusetts.

Manual Exercises. an Important Auxiliary in the Formation of Correct Intellectual Habits, Daniel W. Jones, Master of the Lowell School, Boston. Discussion.

Saturday, April 11th.

10:00. The Value of Education Relatively to the Consumption of Wealth, Prof. Simon N. Patten, University of Pennsylvania.

11:00. Origin of Mechanic Art Teaching, Its Introduction into this Country, Prof. J. D. Runkle, Massachusetts Institute of Technology.

THE NEW ENGLAND CONFERENCE OF EDUCATIONAL WORKERS is an association to promote the highest ends of education by securing the complete and harmonious development of all the human faculties through self-activity in observation, thought, and expression.

To this end the Association proposes to unify the various departments of educational work from the kindergarten upward; to study the fundamental principles of education; to organize such a system as shall harmonize methods of instruction and training, and make them more effective in public and private schools.

Any person of good moral standing, and interested in the objects of the Association, is eligible to membership.

ORGANIZATION.

Committee on General Education.—Gen. Francis A. Walker, Chairman.
Committee on Kindergarten.—Miss Leliah B. Pingree, Chairman.
Committee on Form Study, Drawing, and Color.—Henry T. Bailey, Chairman.
Committee on Elementary Science.—Henry L. Clapp, Chairman.
Committee on Manual Training.—Edwin P. Seaver, Chairman.
Committee on Membership.—John O. Norris, Chairman.

Edwin P. Seaver, Chairman Executive Committee; John O. Norris, Secretary; C. E. Meleney, Treasurer.

ORDER OF THE CHAPTERS AND APPENDICES.

This volume of the present Report, consists of an Introduction, and twenty chapters of varying lengths, followed by a series of nine Appendices (I to Q inclusive). An exhaustive analytic table of contents of the chapters, with a list of the titles of all the papers in the Appendices, precede the "Introduction;" and a concise topical index closes the volume. These aids, with the numerous cross heads, and the running page titles, will, it is hoped, so facilitate the use of this large book of reference as to render its varied contents readily accessible to the reader.

The first chapter opens with an argument to show that Industrial Art Drawing is the logical basis of both Artistic and Industrial Training—that the elementary steps are the same, and that the divergence should come when the pupil elects to devote himself to either specialty. The main object of the present Report is stated to be the development of artistic knowledge and of Art Industries. The development in the community of a love for beauty, is urged, and examples of how this may be promoted in schools are given. The Boston Girl's High School collection of casts, is noted; and the fact stated that, in England, this precedent has been followed and an association for placing art objects in schools organized. The noble memorial window of stained glass, placed in the State Normal School building at Albany, is described. In Chapter II, the beginnings of the demand for Industrial Education in schools are set forth; and it is shown how early the Industrial side of the new Industrial Art movement began to appear, by the instance of the "Whittling School" of the Hollis Street Church, in Boston, which was opened in 1871.

Incidentally, in a concise history of the development of Boston public schools, the existence of a constant purpose to adapt these schools to the changing needs of the people is shown.

As early as 1883, Superintendent Seaver, of Boston, urges the establishing, by the city, of a public Manual Training School after the model of Professor Woodward's school at St. Louis.

Extracts from an address in 1883, by Hon. William Walter Phelps, illustrate the different ideas as to public schools which then prevailed in New Jersey, and in Massachusetts. An English writer gives the historical lineage of the Massachusetts public schools, and traces the sources of the high ideals of New England educators.

In Chapter III, the readiness of American educators to recognize defects in school methods and to welcome promising experiments, is recorded. To Prof. M. A. Newell, the distinguished State Superintendent of Education in Maryland, the credit of making, when president of the National Education Association, in Louisville, in 1877, and again in Philadelphia, in 1879, one of the earliest and ablest arguments for the new movement looking to some form of industrial training in all public schools, and especially to the opening of public Manual Training High Schools, is accorded. A reference follows to the account of the remarkable experiments of Mr. Charles Godfrey Leland, in the art training of children in Philadelphia, as given in Appendix "K." The chapter closes with an appeal for the artistic training of the manufacturing workers of America.

Chapter IV opens with the statement that it is written three years later than the chapters which precede it, and recognizes the rapid progress of the new industrial movement, which enforces a change in the plan of the present volume. It treats of the new departure in education in public schools, dating from 1870, and ends with the plan of the chapters to follow on Industrial Education.

Chapter V remarks upon the very general interest taken by the community at large in this movement for industrial training, and traces the causes back a half century to the beginning of the wonderful revelations of science, and the opening of the earliest schools for giving education in science; shows the difference between the old-time labor schools which were foredoomed to failure, and the present laboratory methods of the new education, in the introduction of which, following the lead of the elder Silliman at Yale, Agassiz in Cambridge, and Newell in Baltimore, were the precursors.

Chapter VI treats of Kindergarten and Manual Training Schools, both experiments, but both based on scientific methods of teaching. A recognition of the right of every child to a free public education is seen to be rapidly extending.

In Chapter VII, a general view of the proposed Industrial Education is taken, with a consideration of the limits to be assigned to free public education; need of clear definitions stated; reasons why certain forms of industrial training formerly given at home must now be given in school, if at all; arguments for giving such training in school.

Chapter VIII is given to an attempt to analyze and define the term "Industrial Education."

Chapter IX shows how the direction and amount of Industrial Training given in different schools must be modified by their conditions and surroundings;—that some knowledge of common industries is desirable for all; treats of city schools and rural schools; and shows that the public free Manual Training School must, in the nature of the case, differ from its prototype the private pay Manual Training School. The chapter closes with this question: "How can the boy graduate of the Manual Training School enter the actual workshop in the face of existing obstacles?" This is a practical question demanding solution.

In Chapter X, the growing necessity for some form of industrial training for American youth, unless Americans are willing to abandon to foreign immigrants all mechanical and artistic employments, is set forth. The chapter closes with announcing that accounts by educators, of the experiments in introducing the new methods in various places, are to be given in the chapters which follow.

Chapter XI introduces the account of the experiments in various States, and cities, and briefly recites the origin of the movement.

Chapters XII to XV inclusive, contain accounts of experiments in introducing various forms of industrial education in public schools, beginning with a history of the experiment in the city of Washington, D. C., followed by similar accounts of those undertaken in the New England States, the Middle States, and the Western States, a chapter being assigned to each section.

Chapter XVI, School Exhibitions.

Chapter XVII treats of the New Education Associations and their relations to Public Schools.

Chapter XVIII is given to Manual Training Schools as a part of the public school system, and contains an account of the schools thus far established, beginning with the first free public Manual Training School established in the country, "the Baltimore Manual Training School." Reference is made to the incorporated private Manual Training Schools, the accounts of which will be given in Part III of this Report in connection with the institutions of Technical Training.

Chapter XIX is given to an account of the adoption of technical Manual Training in Girard College.

Chapter XX closes the volume proper with an account of the Free Kindergarten and Workingman's Schools, under the auspices of the Society for Ethical Culture in New York City; and is a description, in detail, of the experiments initiated by Professor Adler.

CONTENTS AND ARRANGEMENT OF THE APPENDICES.

The Appendices, which fill more than half the volume, follow; these contain material, derived from American and foreign sources, relating to the topics treated in the body of the book; each volume of this Report being bound up with the Appendices which relate to, and supplement its contents.

A general introduction by the editor prefaces these Appendices, and each paper has, if it is thought desirable, its own special introduction, so that little of explanation seems here called for. Each Appendix contains a number of papers, the titles of which are given in the table of contents which precedes it. These titles number in all one hundred and twenty-five; the sum is suggestive of the scope, variety, and comprehensive character of the present volume. Cross-heads whenever found convenient are inserted by the editor, if not found in the paper, as are also the running page titles of subjects treated; the prime object being to make each article, and every page of this large volume, as conveniently accessible as possible. In the arrangement of the Appendices, a logical order of succession is sought; the arguments in favor of the free public schools, for example, coming first; since the existence of such schools must precede any proposed changes in the studies taught in them.

Appendix "I," the first of this volume, comprises papers relating to the theory and purpose of the American Free Public Schools. Copious extracts are given in the opening paper from the remarkable series of reports made by Horace Mann, during the twelve years in which he was Secretary of the State Board of Education of Massachusetts. As these reports are out of print and, therefore, practically inaccessible to the public, it was felt that no better service could be rendered to the educators of to-day than to reprint the unanswerable arguments of this great pioneer and apostle of the common schools of America. The papers which follow all relate to the free public schools.

The principle that free public schools are essential in a free republic, having been thus formulated; the next Appendix is given to a consideration of the most elementary of these schools, so as to begin at the beginning, as it were.

Appendix "J," is accordingly made up of papers relating to the Kindergarten, and its influence upon artistic industries; and opens with a reprint of Miss Elizabeth Peabody's edition of Cardinal Wiseman's famous discourse on "The identification of the artisan and artist;" or, in the Cardinal's words, "The Relation or Connection Between the Arts of Production and the Arts of Design." Papers by Miss Emma Marwedel, a well-known Kindergartner; and reports of European and American conferences of educators concerning Kindergarten, follow.

Appendix "K," is made up of miscellaneous papers, mostly referring to artistic training and environment, and relates especially to those chapters which were in type before this volume was given up to Industrial Education as divorced from the art idea. The very interesting experiments by Mr. Leland, in the art training of young children, are here described. Accounts are given of the artistic school surroundings of certain schools in France, and in England, which will be found of interest to all who believe in the possibility of the æsthetic culture of school children.

The succeeding five Appendices, "L" to "P" inclusive, are entirely given to matters relating to Industrial Education.

Appendix "L," consists of fifteen separate papers showing various phases of Industrial Education in relation to Public Schools; as set forth by American educators, in papers, addresses, discussions, and conferences. A body of most interesting material.

Paper IX, of this Appendix, contains a very full account of the Swedish Slöjd movement, compiled by the editor of this Report from various authorized publications.

Appendix "M," is historical, and is made up of papers showing the origin and development of the Industrial movement in this country, from 1872 to 1889; with a brief summary of European experiments, made by Mrs. Paddock, in her paper entitled "Industrial and Technical Training."

Appendix "N," contains papers by leading English educators, and officials, showing what has been done in England towards Industrial Education. These will be found of great interest.

Appendix "O," relates to the Industrial Training of girls and women, in some European countries; and to Manual Training in France.

Appendix "P," is made up of extracts from official reports as to the status of Industrial Education in several American cities. In some instances the histories begun in the body of this volume are here brought down to a later date.

In Appendix "Q," the final Appendix of this volume, the theme of the first volume of this Report recurs, in the collection here made of papers relating to drawing in public schools. By a perusal of these papers, especially of the reports of the meetings of the Industrial Art Teachers of Massachusetts, it will be seen that, however much the ideals of Industrial Art drawing may have suffered in the increased attention absorbed by the Industrial movement, there is yet a remnant who believe in the value of beauty, and in the development of the æsthetic faculties; though there is, alas, even in this Appendix, abundant proof of the decadence of the Art ideals, on the part of the majority of those interested in Industrial Education. The final article, by Dr. Harris, strikes a clear note calling the lovers of Art back to their original fealty! May it be heard and heeded by all educators!

In the first ten chapters of this volume,—which precede the chapters containing the historical accounts of experiments in introducing some form of industrial training in various towns and cities, and in the opening of Public Manual Training High Schools,—an attempt has been made to consider suggestively the questions raised in all their relations; to set forth the substantial causes which underlie this movement, and to show that education, in all its varying forms and phases, is, of necessity, always education of the intellect,—that the governing mind of man must direct even his muscular action; to suggest, further, that these new methods cannot supersede, but can only re-enforce the proved methods of education, and must, eventually, take their true relative position among the many approved means at the command of educators.

Through all these considerations the desirability that the art element shall be developed as fully as possible, that the advance in this respect which was gained when the Walter Smith system of drawing won success, not only in Massachusetts, but in so many places besides, shall not be lost through the carelessness, indifference, or ignorance of the Manual Training School advocates, is kept ever in view. While much space is given to the consideration of this question of the general introduction of the Manual Training High Schools as a recognized class of schools in all public school systems, and to a record of such experiments in introducing these schools as have been made in different places; yet it needs to be borne in mind that these particular schools are but a single feature of the proposed changes in the methods to be adopted in the public schools. Intended only for boys of fourteen years of age, and older, they can, in any event, reach but a very small minority of public school children. Regarded as special schools giving instruction in the mechanical use of tools, the attention given in them to the practical and mechanical features of drawing is perfectly legitimate; though it is believed that the artistic features may, also, profitably be taught in them.

The culture of the æsthetic faculties of the child should begin in the Kindergarten, and be continued through all the years of school life; and it is to be hoped that the advocates of Industrial Art Drawing, and all who desire the art culture of the children, will realize that if in the Manual Training Schools only a single feature of drawing is taught, this need not in any way prevent, or lessen, the attention to be given to the æsthetic training of the pupils in the other schools.

The Scope of the Industrial Education Movement.

The Industrial Education Movement is far more wide embracing in its scope, than would be implied by the present prominence of the Manual Training School feature; it includes the girls, as well as the boys; it considers the needs of children in the remote country schools, no less than the wants of those in the crowded cities; it is busy with the problem of a logical system of training, beginning with the Kindergarten and ending only with the High Schools. It is a vital movement full of interest and of enthusiasm, and has drawn to its support wide-awake educators all over the land. It has also aroused great interest on the part of the public, and some outspoken advocates, inexperienced in the practical work of education, have in their enthusiasm, made many statements in regard to existing methods of education which are fairly open to criticism.

The questions which have thus arisen during the preparation of this volume have been here seriously considered and frankly stated, and are submitted with all due deference to the thoughtful consideration of American educators.

As in the Appendices to the previous volume, so in these to this, authorities have been collated from every available source; and the advocates and opponents, in the discussions incident to this movement, have been allowed to present their own statements.

It is hoped that in this mass of material, gathered from European and American sources, those interested in the topics discussed will find something of value conveniently accessible; and that, from all these conflicting views and as a result of the many experiments herein recorded, much of practical value will ensue to the advantage of the Free Public Schools of America, on whose well being depends the safety and hope of the Republic.

CHAPTER I.

INDUSTRIAL ART DRAWING THE BASIS OF ARTISTIC AND INDUSTRIAL EDUCATION.

The movement for Industrial Education largely due to dissatisfaction with public school training — Industrial art drawing characterized — The main object of the efforts recorded in this Report are to develop artistic knowledge and art industries — A tendency noticeable in the various women's industrial art associations to develop in the direction of Art — Difficulties of classification — How art may influence and gladden school life illustrated — Growing recognition of the beautiful in nature and art — The placing the collection of antique casts in the Girls' High School, Boston — The ease with which appreciation of the beautiful and the simple elements of correct taste may be fostered in the school room — The English pattern after the Boston precedent, and organize an association for adorning school rooms with art objects — The placing by the Alumni of a memorial window of stained glass in the State Normal School building at Albany, New York.

TWO PHASES OF THE EARLY MOVEMENT FOR A REFORM IN PUBLIC SCHOOL METHODS.

The movement which found its most positive expression in the calling of Walter Smith to Boston, and which has been recorded at such length in the pages of the preceding volume, was by no means limited to the instrumentalities whose history is therein recited any more than it was confined within the borders of Massachusetts.

In many ways, by various methods, and in numerous places a general dissatisfaction with the training given in the public schools was shown; while the instinct, on the one hand, for a so-called practical training, and, on the other, the desire that some knowledge of art should be imparted, and some gratification of the instinctive love of beauty afforded to the child during its most susceptible years, found expression.

These two desires seem at first, especially if looked at from the standpoint of one ignorant of the meaning of the term, or of the methods of "industrial art training," as diametrically opposite, if not antagonistic; but the patient reader who has followed the account of the development of this new study in the public school system of Massachusetts will, it is to be hoped, have come to a recognition that this apparent antagonism need be but apparent; though it must not be forgotten that it could easily degenerate into very active and destructive antagonism if, in any community, the demand for practical industrial education in the elementary public schools should be directed and controlled by ignorant zealots.

DRAWING A COMMON BOND OF UNION.

That a progressive system of drawing, adapted to the various grades of the public schools, is competent to include, develop, and harmonize both these purposes has been, we may perhaps be permitted to assume, demonstrated by the experience of Massachusetts, as hereinbefore recorded. Thorough knowledge of drawing, as we have seen, is the basis of all scientific industrial development, and, as well, of all the arts of design. This mastery of drawing is essential, on the one hand, to the engineer, the machinist, the carpenter, the blacksmith, the workers in metal, and the weavers of textiles; and, on the other, to the masters of those arts of expression wherein the poets embody their highest conceptions, their choicest fancies, for the ennobling and delectation of mankind; for drawing is the willing hand-maid of the goldsmith, the sculptor, the painter, the architect.

Nor should it be forgotten that throughout the preceding volume the main argument has been upon the methods to be adopted in the elementary education of a people to best fit them to become intelligent lovers of Art, and skilled producers in artistic industries; for it is the development of art workers, not mere "hewers of wood and drawers of water," that the new education herein urged is designed to promote. If this fact is kept steadily in view, and the truth that the basis of this artistic training lies in such industrial art drawing as it is here shown has been and can be taught in all public schools, is not forgotten; it will enable the educators and the public to preserve their equanimity in the midst of whatever excitement may be aroused by the urgent and angry demand for the teaching of practical mechanics in the infant schools. What these impatient, so-called "practical" people desire, will not in any event be hindered, but will rather be helped by all such training in the knowledge and practice of drawing as can be taught in all the schools.

STRICT CLASSIFICATION IMPOSSIBLE.

But it is not my purpose at this time, to discuss these questions further than to show that with advanced scholars, and especially after the school age has been passed, the subject of further training naturally divides itself into those courses which look to the technical training of engineers and workers in the scientific industries; or, into those which look either simply to the acquisition of the literature of the Fine Arts, or to their practice. In some cases these courses of study of necessity overlap, and it becomes a question as to whether a certain school or institution should be catalogued on the industrial or the artistic side. Some professions, notably that of Architecture, so blend constructive with artistic requirements that they might properly be cited under either head. To the famous question, "Under which king, Bezonian?" they could truthfully respond, "Under both!"—for the true architect is builder no less than artist.

The several women's art associations in the various cities and towns, known under different titles, in some cases incline more to industrial, in others more to artistic development, though happily the tendency seems ever towards a truer and higher art; while the attention given to art subjects in the various colleges and universities ranges from an absolute ignoring of the whole subject by some institutions, through a course of training in the mere scholastic history of Art by others, to the furnishing of every facility for practical training in all the Fine Arts by *a very few.*

For these reasons it has been found quite impossible to arrange every institution herein recorded, with absolute precision; though the general plan of devoting the first part of this Report to the subject of the public schools and to accounts of the further industrial and technical training provided in the United States, and to group the institutions specifically devoted to the Fine Arts in the latter part, is adhered to, so far as it has proved practicable.

The delays that have occurred to the publication of this work have in themselves necessitated many changes, and it is feared may result in some disappointment on the part of those who so kindly furnished valuable information in the earlier years of its preparation. All historical matter has been retained so far as possible, but local and scattered city or town evening drawing-schools, or experiments in the new study in different State normal schools, or other educational institutions, very important, at the time, as indices of progress in the adoption of the new idea, have lost their relative importance by the very general development of similar efforts; thus material collected with much pains, has been forced to give place to that which records later developments; so that in these instances, as has often happened in the promulgation of new ideas, the very success of their efforts obscures the work of the pioneers and first promoters.

A NOTABLE ART MOVEMENT.

As an instance of a successful attempt to add an element of artistic beauty to school life, the placing a carefully selected series of casts in the hall of the Girls' Normal and High School building in West Newton street, Boston, in 1870, may be cited.

The suggestion was made some two years before by a member of the educational committee of the American Social Science Association, and by them approved, "as a simple but efficient means of introducing an æsthetic element into the educational system of the United States." With the concurrence of the school committee and the architect, who arranged the hall of the new building with reference to this purpose, the plan was successfully carried out.

The expense was met by private subscription. The casts, in addition to most of those of the frieze of the Parthenon, arranged as a frieze of the hall—(at that time there were but one or two complete sets of these casts of the frieze in the United States)—comprised ten statues. Among these were "The Venus of Milo," "The Demosthenes," "The Diana of Gabii," and the "Pudicita" of the Vatican, and eleven antique busts, which were placed in position around the hall. These casts were bought in London, Paris, Rome, and Boston, and the total cost of purchase, importation, etc., was a little more than $1,500.

The above facts are given in a little pamphlet of ten pages, published by Houghton & Co. in 1871, for the American Social Science Association, in which is a brief description of each of the casts, with particulars of their cost and where they were to be had. An additional list is given of some thirty-six other casts, "equally suitable for educational purposes."

When it is remembered that the Boston Museum of Fine Arts was only incorporated in 1870, and that its collections were not open to the public till some years later, so that, aside from the few casts of antique sculpture possessed by the Athenæum, there was then no similar collection accessible to the people of Boston; the significance of thus establishing, at this time, a museum of ancient statuary in a public school for girls may, perhaps, be appreciated.

The casts and paintings in the Art Gallery of Vassar College, Poughkeepsie, N. Y., the few modern paintings, and the recent acquisition of the admirably chosen collection of casts of antique and mediæval sculpture which now crowd the rooms and corridors of Hillyer Hall, the new art building of Smith College, Northampton, Mass., show that the value of Art and of art knowledge, as an element of culture and a desirable adjunct in the higher education of women, is at last, to some extent, appreciated.

It is an interesting example of the working of the American system of free public schools, that such a movement for adding some knowledge of art to the curriculum of study, and of further surrounding the school life of the pupils with the adornment of the casts of such famous examples of the art of the ancients, should thus have been inaugurated in a girls' public school in Boston.

That such a project was initiated by one individual, and carried out by the voluntary co-operation of several like minded public spirited citizens, further illustrates how, in the American system, spontaneous private liberality and organized public effort, strengthen and complement each other.

POSSIBILITIES FOR ART TRAINING IN PUBLIC SCHOOLS SUGGESTED.

Of course, few public school buildings are likely to be provided with such extensive or costly art collections, nor, with the present multiplication of public art museums in the larger cities and towns, is it perhaps desirable that they should be; but the placing of one or more of such examples of the beauty of antique art in the general public room of the school building, or in the several school rooms, where all can see them, with the use a wise teacher can make of such objects, if it were only in illustration of references in English literature, is still for countless reasons desirable, and, as a matter of fact, has become not uncommon.

If the school officials and tax payers realized the worth of such attractive additions to the school building and rooms, owing to their influence in substituting in the minds of the scholars the impulse to preserve in place of the instinct to destroy, they would hardly hesitate to incur, when erecting the spacious costly school buildings, which are so rapidly coming to be a marked architectural feature in all thriving American towns and cities, the small additional cost required to add, at least, a few examples of art works; if only enough to suggest to the scholars the idea that they themselves should contribute to increase the number of these attractions. The small payment for these articles might well be justified as an insurance against injury, just as the fire premium is an insurance against destruction, and so be approved; even by those who care nothing for the educational or æsthetic influence of art objects. In any complete view of education, however, such articles will be seen to be just as essential a part of the material to be provided for the school room, as are now the blackboards, maps, globes, charts, dictionaries, and drawing models. But it is "a far cry to Loch Awe," and there are few places, even of those in which there is now no hesitancy in expending ten, twenty, or fifty thousand dollars upon a school building, where the building committee would venture to include, among the items for "furniture and fixtures," a bill of $200 to $300 for art objects; though ten times that amount would be unquestioned if paid for so-called ornamental work on the exterior of the building, which, in many instances, would better have been omitted. The procuring such art examples must probably, for a long time, be left to the private action of teachers and scholars or to some few such enthusiastic art lovers as were those of Boston; it may be otherwise when one or two generations of children, who have been thoroughly trained at school in industrial art drawing, shall have grown up and taken their places as active members of the community.

WHAT CAN BE DONE BY THE SCHOLARS THEMSELVES.

Meantime, much can be accomplished by the voluntary co-operation of the scholars with very small individual expenditure. If, for example, in the higher grade schools successive classes of students should each as they graduate leave, as a class memorial, some addition to the art possessions of the school,—a cast of antique bust or statue, or a fine heliotype, autotype, photogravure, engraving, or etching, the school would, in the course of a very few years, have acquired an interesting collection of more or less intrinsic value; but if a plan for such a collection were to be carefully and intelligently thought out in advance and generally understood, in accordance with which the several classes should select their annual gifts, the aggregate collection would be vastly increased in value by being harmonious and purposeful. Nor would the preparation of such a plan for a desirable art collection for a given school, or class room, be very difficult. The studies and the age of the pupils would be the modifying circumstances which would indicate the character of the collection to be formed. This collection might readily subserve several distinct purposes. First, as increasing the attractiveness of the room and so unconsciously educating the æsthetic nature of the pupils; second, in illustrating the history of Art, and, lastly, in illuminating the studies of Mythology, History and Literature. In elementary and infant schools such utility of graphic and artistic illustrations of the subjects to be taught, is very generally appreciated and adopted, beginning with the picture alphabets.

While many might readily admit the educational value of such an art collection as was procured for the Boston girls' school, yet the extent and cost of so important a collection of statuary might very readily tend to discourage any attempt to follow that example; so that it seems advisable to suggest that very much that is desirable in the direction there pointed out can be accomplished with small expenditure; just as those casts are the cheap substitutes and representatives of their priceless antique marble originals, so the several comparatively inexpensive photographic processes may serve a like purpose. Fortunately a knowledge of the cost of a work of art is by no means the essential or predominent element requisite for the appreciation of its beauty; in the enjoyment of which the "seeing eye" is of far more importance. With very slight expenditure of money the school house and the class room can be given the added attractiveness of artistic surroundings. In this connection one or two charming instances of successful school-room adornment which have come under the writer's observation may be mentioned. Doubtless there are many similar instances throughout the country; certainly there is no reason why there should not be, for what has been done in these instances can as readily be done elsewhere; if not all at once, certainly within a few years by annual additions of artistic articles as just now suggested.

EXAMPLES OF ART IN SCHOOL-ROOMS.

In the long halls of the High School building in the city of Washington, D. C., are hung a series of views of the famous buildings of the world, simply and neatly framed, which were given to the school by the pupils, and which serve at once to relieve the bareness of the walls, and to convey a vivid impression of these world-famous triumphs of architecture. They do something more, they give to the chance visitor an appreciative sense of the high character of the school, and of the value to the community of such an influence upon its youth as that which has thus led the scholars to ornament, instead of to deface, the walls. They are at once the means and evidence of increasing refinement.

In some of the school-rooms in the Franklin building in the same city are seen a cast of an antique bust in a niche and choice engravings on the walls.

In the Maryland State Normal School building, in Baltimore, beautiful large engravings, handsomely framed, the gifts of a school literary society, give an air of culture and refinement to the main entrance hall, which is in harmony with the impression received from the large, lofty, well-lighted school-rooms. In each of these, over the line of blackboards which extend all around the room just above the dado, are hung fine engravings; while in a niche, above the teachers' seat, is placed a good cast of an antique bust. At the close of the school term the work of the pupils in drawing remains upon these blackboards, so that the whole of the progressive course of the instruction in drawing is shown at a glance, and the excellence of the pupils' work in chalk and colored crayons, the latter used in the plant analysis and in map drawing, furnishes ample proof of the thoroughness of the instruction and of the facility acquired by large numbers of pupils; thus serving as a striking object lesson of the success attending the introduction of this new study. The scholars' work on the walls, the choice engravings, the cast of the antique bust, the new looking, handsome desks, which one can hardly believe to have been in use for a dozen years, all are in harmony and all add to the attractiveness of the school-room.

The pupils, coming from all parts of the State, can hardly fail to form here an ideal of the attractive possibilities of a school-room, which shall lead them, when they may return as teachers to their several rural communities, to make the school-rooms over which they may preside attractive by like means; and so each school-room and each teacher may become a center for the diffusion of a love of learning and of beauty.

In short a better means for the development of the love of the beautiful, the cultivation of the artistic instinct, and the promotion of culture, (which last is the end and aim of all high education), and, at the same time, one attainable at so little cost, could hardly be devised than this happy Boston idea of thus placing a cast of some antique bust, or statue, or bas-relief in a place of honor in every school-room.

The cast should be so placed, and so surrounded, as to show it to the best advantage. This very setting of it may be made an object lesson in the art of home adornment; showing how the beauty of things, may be enhanced or diminished by their surroundings. Such a work of art may be made the text for a thousand talks by the teacher, enlarging the boundary of the pupil's mental horizon; for it links back to all the Past of History, and is in living accord with all the Present of Beauty.

If, in addition, the bringing of flowers, in their season, for the adornment of the school-room is encouraged, the means are afforded for very practical lessons in the tasteful arrangement of beautiful objects, and the surrounding of the school-room, whether in town or country, may be made inviting; so that the most neglected child, coming from a home bare of all such attractions, may feel something of that ineffable charm of beauty which inheres alike in the fleeting loveliness of the flower and in the enduring grace of the sculpture.

MODERN GROWTH OF THE LOVE OF BEAUTY IN THE UNITED STATES.

In this connection it may not be out of place to remark upon the growth in appreciation and the more open recognition of the value of beauty as an element of life, which is felt and shown by Americans of the present day, in contradistinction to the habits and customs of former generations.

Perhaps in nothing is this more noticeable than in the profuse use now made of flowers in the decoration of churches and school-rooms, as well as their universal use in private life on all social occasions; certain it is that not many years since, in New England, at least, the placing of baskets and bouquets of flowers in the churches, and their use in adorning the pulpit, now so customary, would have been thought unworthy the serious business of the hour, if not unfitting the sacred character of the place.

The incident, just recorded, of placing the casts of antique sculpture in the hall of the girls' school, in the Newton Street School in Boston, was, indeed, a marked instance of the appreciation of the need and value of the æsthetic element, which had heretofore been wofully lacking in the common surroundings of life in America, as well as in the educational systems of the country. It was also an indication of one phase of dissatisfaction resulting from this lack of beauty; as well as a protest against the mere literary training afforded in the public schools. The contemporary movements which led on the one hand to the calling of Walter Smith to Boston and on the other to the establishment of the Boston Museum of Fine Arts, had like origin. But much has been written to little purpose if argument is here needed to show the comprehensive nature of Art and the common bond which should link artisan and artist; nor, how industrial art training is vital and valuable only, as it inspires the thought, while it trains the hand, of the laborer.

ENGLAND AND FRANCE DO LIKEWISE.

Since writing the preceding account of the placing of the casts of antique sculpture in the Boston Girls' High School in 1870, the report of the Boston School Committee on Drawing and Music for 1883* has been received. This contains a reference to movements in France and England, looking to the forming of voluntary organizations for similar action in the schools of those countries.

As showing the estimate of the value of such school surroundings, by men whose judgment on matters relating to education and to art is recognized as of the highest authority, this extract from the report of the English committee is of interest.

It is also very interesting to note that the action of our Boston art lovers anticipated this movement by more than a decade.

> Before concluding this portion of our report relating to drawing, the committee wish to call the attention of the board to the desirable formation of an art-for-schools association, like that described in a French report presented to the Minister of Public Instruction in 1881, by a committee formed for the decoration of school-houses; and a similar report made to an English institution recently formed in London, with Mr. John Ruskin as president, and Mr. Matthew Arnold, Sir Fred. Leighton, and other eminent men as vice-presidents. The object of this Association, as stated in the circular, is "to bring within the reach of boys and girls in our Board and other schools such a measure of Art Culture as is compatible with their age and studies." The English committee are of opinion that the time has arrived when an organized and general effort should be made in the same direction as at Manchester, where a committee has been appointed to remedy the deficiency of English school arrangements in the means of awakening a sense of beauty and an interest in art.†
>
> They propose, therefore—
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> 1. To negotiate with Art publishers for the purchase of prints, photographs, etchings, chromo-lithographs, etc., on advantageous terms, and to supply them at the lowest possible price to schools.
> 2. To reproduce, from time to time, by one or more of the processes familiar to engravers and printers, carefully selected examples, likely to have a large circulation.
> 3. To print a descriptive catalogue and price-list of the examples which the committee are prepared to recommend to the notice of schools.
> 4. To present to schools in special cases, and as the funds of the association shall allow, small collections and books explanatory of them.
> 5. To arrange various loan collections to be placed at the disposal of schools on such terms as may prove convenient.
> 6. To bring together a number of examples to be exhibited in a suitable place as a tentative model of a standard collection. The collection to consist of (1) Pictures of the simplest natural objects—birds and their nests and eggs, trees, wild flowers, and scenes of rural life, such as town children seldom see, and country children often fail to enjoy consciously until their attention is specially called to them; (2)

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*School Document No. 20—1883; Report of the Committee on Drawing and Music, 1883. Boston: Rockwell and Churchill, City Printers, No. 39 Arch Street. 1883. Pp. 18.

†For an account of what this English society does, see article entitled "Pictures for Schools," from the Manchester Guardian of July 8, 1887. Appendix K.

Pictures of animals in friendly relation with human beings, especially with children; (3) Pictures of the peasant and artisan life of our own and foreign countries, incidents of heroic adventure, etc.; (4) Pictures of architectural works of historic or artistic interest; (5) Landscapes and sea-pieces; (6) Historical portraits; (7) Scenes from history; (8) and last, but by no means least, such reproductions as are available of suitable subjects among the numerous works of the Italian, Dutch, and modern schools.

The Committee, while admitting that art culture is not one of the purposes of the public schools, ask the sympathy of the Board in their efforts to organize a similar association in Boston, on the ground that, aside from the incidental culture afforded by the sight of such art works, they will prove of material aid to the teachers in many branches "as objects of reference."

They close this topic with the following statement:

> The decoration of the exhibition hall of the Girls' High School with casts, and the prints hung up in certain Grammar and Primary school class-rooms, show that the masters and teachers are, in many cases, alive to the importance of the subject, and ready to aid in any well-organized effort to promote its further development.

It will be observed that the plan announced by the English committee is very practical and comprehensive; that it includes elementary as well as superior instruction, and is by no means limited to definite teaching of Art, but proposes to make use of pictorial illustrations with the purpose of familiarizing city and town bred children with country scenes, as well as to attract the attention of all children to direct observation of Nature. The illustrative uses of graphic and pictorial representation for educational purposes are, indeed, almost unlimited. The Museum of the United States Bureau of Education possesses several very interesting series of such illustrations, mounted like wall maps for school use, such as are used in France, Switzerland, and Germany.

These are of differing merit artistically, some being very cheap chromo lithographic views, illustrating the scenery of the countries and the customs of the people, others being very artistic and admirably adapted for their purpose; all of them having the common end in view of communicating knowledge through the eye. A series of French charts showing various processes of manufacture in different industries, especially those used in the making of iron and steel, are particularly noticeable for their artistic excellence. There is also a very excellent series of English charts illustrating physics. Our American educational publishers, who have shown such enterprise in the preparation of charts and the illustration by engravings of text-books, are doubtless prepared to meet all demands for similar illustrative charts as they may arise, though specimens of such American artistic aids to teachers are not, as yet, included in the collections of the Educational Museum of this Bureau.

In the modern system of teaching, in which the pupils are made to study the objects themselves rather than to simply memorize verbal descriptions of them, as was formerly required, there is a rapidly-growing demand for such graphic and pictorial illustrations. Many will doubtless readily recognize the value of these methods of education in other studies who are not yet awake to their equal efficiency in developing taste and artistic capabilities, or of their use in imparting direct knowledge of Art and of its possible applications to industries.

A thorough examination of the subject will tend to convince the investigator that there is utility in beauty; that Art may as readily become the "Handmaid" of Education as of Religion; and that whatever is added to the beauty and fitness of school surroundings will eventually appear in the added attractiveness of homes, so that the community, whether consciously or not, is very directly interested in promoting the Art attractions of the schools.

A NOTABLE ART PROJECT.

As illustrating the rapid development of the artistic adornment of school buildings, may be cited the recent instance of the New York State Normal School building at Albany. This school was established in 1844. In the spring of 1883 the legislature authorized the purchase of a site and the erection of a new building. A desirable site was secured and a stately building with a frontage of 128 feet, a depth of 160 feet, and having a central court 50 by 90 feet, erected. The large assembly hall has a seating capacity of eight hundred. At a meeting of the Alumni in December, 1883, attended by six hundred graduates, it was decided to place in the main assembly hall an Alumni Memorial window.

The following extract from the circular letter of the Alumni committee contained a description of the window:

THE ALUMNI MEMORIAL WINDOW.

The new building for the State Normal School, of which the accompanying picture is a representation, is in process of erection. Located on Willett street, and fronting on the new and lovely Washington Park, its situation is superb as its design is beautiful. The building, complete and furnished, will cost about $175,000. The large Assembly Room, the position of which is indicated by the Great Window in the picture, is 90 feet long, 58 feet wide, and 40 feet high. The window will be 14¼ feet wide and 32½ feet high, and will be the largest single window in this country. This description is from Ezra Prentice Treadwell, of Boston, Mass., who designs and executes it.

The window is designed to represent the influence of education.

The central motive, as presented in the five principal panels, is the development of mankind and of the arts and sciences as the result of education.

The five divisions represent "the teacher and the scholar" (in the central panel, the teacher having the idealized face of D. P. Page),* surrounded by "the painter and the sculptor," "the poet and the musician," "the orator and the scientist," "the narrator and the historian." The figures are life-size; the dignity and character are given by the classic treatment of the figures and by the suggestion of the Academy as a background, while the tree of knowledge, the olive, overshadows the group, and white doves, emblems of peace, float above them. Filling the arch over the group are the "marks," hieroglyphs of the early printers, as Aldus, Caxton, Guttenburg, etc., thus symbolizing books, the great means for the advance of education.

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* The beloved first principal of the school, deceased in 1848.

As a contrast, and recalling the Dark Ages, are the five groups forming the lower section of the window, representing Folly, Ignorance, and Vice, surrounded by the fanatic and the warrior with their victim, the iconoclast, the ignorant and bigoted who martyr the saints.

The window is to be executed in mosaic of American colored glass, all the shadings of color in figures, faces, and draperies being carefully painted on and burned in the glass, while the outline drawing will be entirely in lead.

It will be observed that the window is to be in a "mosaic of American colored glass," thus incidentally showing the progress in artistic industries in the United States; this peculiar work, now coming into very general use, could hardly have been obtained ten years previously.

This assembly room is to be still further adorned with life-size portraits of former members of the Faculty and of the executive committee of the Alumni. Here native art is called to its legitimate work of adorning the structure and also of preserving the memory of the dead, as is likewise seen in the grand memorial building of Harvard.

The historical sketch* from which the above is taken is photographically illustrated with a plan and elevation of the building, and with a view of the window, which last is very beautiful in design.

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* 1844–1884. A Historical Sketch of the State Normal School at Albany, N. Y., and a History of its Graduates for Forty Years. Albany, N. Y.: Press of Brandon & Barton, 1884, pp. 234.

CHAPTER II.

THE DEMAND FOR INDUSTRIAL EDUCATION IN PUBLIC SCHOOLS BEGINS.

Preliminary indications—The "Whittling School" in Boston, 1871—The Industrial School Association—Their report for 1876–1877—Schedule of progressive lessons in wood-working—An interesting hand-book on wood-working—Report of Boston school committee for 1882 in reference to the Industrial School—Mr. James A. Page, master of the Dwight School, reports the result of wood-working classes—Superintendent Seaver reports in 1883 on the new studies—Concise history of the development of Boston schools from 1821—Constant purpose of the schools to meet the growing and changing needs of the people—The superintendent urges the adoption of a City Manual Training School—Address by Hon. William Walter Phelps, M. C., at Paterson, N. J., June 6, 1883—Incidental contrast afforded between the Massachusetts and New Jersey ideals of the province of the public schools and the extent of public responsibility for the training of the citizen—An interesting historical statement by Rev. E. F. M. MacCarthy, M. A., an eloquent English educationist, of the English origin of the Massachusetts theory and system of public education.

THE INDUSTRIAL SIDE OF THE NEW MOVEMENT EARLY SHOWN.

This question of how best to adapt the instruction given in the public schools to the needs of the pupils, was not approached on its artistic side alone; the need of giving to the school children some training that should at least fit them for the common industries of life, was too imperative to be longer neglected; so, about the same time that this movement for procuring the casts was begun, an experiment, also initiated by private citizens, and which at last found its way into one of the public schools of Boston, the Dwight School, and is now being introduced in other communities, was set on foot.

This was an effort to meet the demand for giving a more practical industrial training to boys, than had before been attempted in the public schools.*

This experiment was known as "The Whittling School," which in 1871 was opened in the chapel of Hollis Street Church, under the charge of Mr. Frank Rowell, the purpose of which was to train boys in the use of wood cutting tools. These two experiments, well illustrate the diverse tendencies before referred to, towards the development of art on the one hand and towards the acquisition of mechanical skill on the other. The following description of the school which was the outcome of "The Whittling School," was published by the "Industrial School Association" having it in charge. Rev. George L. Chaney was the president of the association, which was composed of a number of public spirited citizens who were interested in the industrial problem awaiting solution in the common schools. The report* was handsomely printed and was illustrated with several pages of photographs showing the work done by the boys. The treasurer's report shows the cost of the school as $754.48, all contributed. The text of the report, which follows, is given in full, as showing the purposes and methods of the experiment. The fact that in 1884 in several cities similar schools are being started as part of the public school system, lends interest to the account of this early experiment. The mechanical schools of the Massachusetts Institute of Technology, of Washington University, St. Louis, and of Spring Garden Institute, Philadelphia, are developments of the same idea, standing to elementary schools of this class as the high schools and academies do to the lower public schools; while they are intermediate between these primary work schools and the higher technical machinists' and engineering schools, of these same institutions and of "The Worcester County Free Institute of Industrial Science," the engineering courses of "Cornell," and of "Illinois Industrial University," and the "Technical Departments" of the Agricultural Colleges and the Schools of Science.

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* For accounts of various efforts to introduce instruction in several feminine industries to girls, in the public schools; see pages 59–62 of a "Special Report on Industrial Education in the United States," issued by the United States Bureau of Education in 1883, where also will be found further accounts of "Technical industrial training for women," pages 57–74, inclusive.

REPORT OF INDUSTRIAL SCHOOL FOR THE SEASON 1876–'77.†

In the winter of 1876–'77 the "Whittling School," which had been carried on for five seasons in the chapel of Hollis Street Church, united with the Industrial School, conducted for two years in the Lincoln Building, and formed the school described in the following report. The friends and supporters of both schools, and others interested in the cause of industrial training, formed an association called the Industrial Education Society, and this association has developed and maintained the school.

Mr. Frank Rowell, of the firm of Allen & Rowell, photographers, had been the superintendent of the "Whittling School" from its beginning, and he generously consented to take charge of this school without other remuneration than the satisfaction he would take in its success. Messrs. J. H. Fifield and Charles B. Cox, practical wood-carvers, were employed to prepare the lessons and give the instruction. Professor Whitaker, of the Institute of Technology, gave much valuable assistance in the formation of our plan, and to these gentlemen we are chiefly indebted for its success.

The city gave us the use of the ward-room ou Church street, and there, on the evenings of Tuesday and Friday of each week, from 7 to 9 o'clock, the school has been held.

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* Account of an Industrial School in Boston for the Season 1876–'77. Press of George H. Ellis, No. 101 Milk street, Boston, Mass. 1877. pp. 12.

† This report is printed because we believe that it illustrates *the method* to be pursued in industrial education. This method being understood, it can easily be used with other tools and other lessons.—G. L. C.

This room had to be prepared for its new uses. Firm work-benches were set up, giving each boy a space for his work 4 feet in length and 2½ feet in width. Each bench had a vise with common wooden jaws and an iron screw, a drawer with lock and key in which the tools were kept, and a gas-burner with movable arm Each boy was provided with a large work-apron of cotton drilling. All the benches, tools, and aprons were numbered, and each boy was made accountable for their care and keeping.

Printed rules of the school were pasted on each bench, and every precaution taken to secure good discipline.

BENCH REGULATIONS.

"1. Be at bench at 7 o'clock, according to your number.

"2. Do not leave your bench without permission.

"3. Give *all your attention* to your own work. Do not notice anything that others are doing unless requested to do so.

"4. Make no unnecessary noise, such as whistling, etc.

"5. Keep your bench neat, and do not deface it in any way.

"6. After work place all your tools and other equipments in your drawer, according to your number, and return the key to teacher.

"7. Every boy will be held accountable for the tools placed at his bench for his use, according to his number."

Thirty-two boys were admitted to the school. Their ages ranged from twelve to sixteen. About half of them were still attending the day school; the others were employed in stores or offices. They came from the Sunday-schools of the Hollis Street Church and the First Church, and from the Lincoln Building. Perhaps twelve of them had received some instruction in the use of the jig-saw and knife, but none of them had had any previous training in wood-carving or the use of the chisel. There were more applicants for admission to the school than we could receive. If any boy was absent two successive evenings his place was taken by another. A rank-list was kept and pasted on the wall, and each boy knew how his work was estimated by consulting the list. A course of twenty-four lessons in wood-carving was prepared, with special reference to securing the greatest amount of instruction with the least expenditure for tools and material. It was not designed to make finished workmen in wood-carving, but to take advantage of the natural inclination towards handicraft—the Yankee taste for whittling which belongs to most boys, and to develop it and guide it to useful applications.

The tools used in the following lessons were the flat chisel, the gouge, and the veining-tool or small gouge. Smooth blocks of white-wood, 6 inches long by 2 or 3 inches broad and 1½ inches thick, were the material worked upon.

1. The first lesson aimed to teach the boys to cut a concave chamfer around the block, keeping carefully within the lines drawn parallel with the edge of the block, and making the mitres perfect. They were also taught to keep the dip of the gouge even throughout.

2. The second block had eight corners instead of four, as in the first lesson, and the same manipulations were continued.

3. The third block had curved corners.

4. The fourth lesson introduced flat chamfers, with vein-lines cutting across the block.

5. In lesson fifth the vein-lines of block No. 4 were stopped before coming to the edge.

6. The sixth lesson introduced a pattern or ornamental figure for veining.

7. No. 7 taught the boys to make perfect corners with vein-lines.

8. The shape of block was changed and a new pattern for veining given.
9. This lesson taught how to make round ends to flutings.
10. Finishing mitre-ends of chamfer.
11. Fluting, with especial care in keeping dip of gouge even and making the mitres perfect.
12. Carving diamond-points all around the block, and fluting.
13. Making perfect projections around the block.
14. }
15. } Fluting, and finishing the end of flute.
16. Same as No. 15, with change in shape of block.
17. Making scroll-corners.
18. }
19. } Same as No. 17, with change in pattern.
20. }
21. } Same as No. 19, with new pattern.
22. Cut corner-chamfer and flute.
23. Same as No. 22, with new pattern.
24. Make perfect mitres, with sharp points at mitres.

In one of these lessons cherry was substituted for white wood, but it was too hard for the younger boys. It will be noticed that no specific article was made in the school. The variety of manipulations and change of patterns were enough to maintain the freshness of the scholars' interest, without introducing the manufacture of any article of trade or commerce.

The object of the school was not to educate cabinet-makers or artisans of any special name, but to give the boys an acquaintance with certain manipulations which would be equally useful in many different trades. *Instruction*, not *construction*, was the purpose of this school. After the blocks were finished they were placed in a rack on one side of the room, and each boy's progress could be seen by consulting those specimens of his work.

The blocks were prepared by the teachers before the school opened. If another term of instruction could have been given the boys would have been taught to prepare the blocks themselves.

Those of them who have been trained in industrial drawing in our common schools would be perfectly competent to make their own patterns. As an illustration of this, one of the teachers said that he took some of the patterns from the drawing-book of his own child, who was a scholar in one of our public schools.

Does not this incident show the natural sequence of such a course of hand-culture as we have been describing upon the education in drawing now prevalent in our common schools? One such work-school as we have described might furnish four hours' instruction every week for 192 boys; or, if evenings were added, for 288 boys. This is more than the number of pupils between the ages of thirteen and sixteen commonly found in any one grammar school. We cannot but believe that it would be easy to establish, in connection with all our grammar schools for boys, an annex for elementary instruction in the use of the half dozen universal tools; *i. e.*, the hammer, saw, plane, chisel, file, and square. Three or four hours a week for one year only of the grammar-school course would be enough to give the boys that intimacy with tools, and that encouragement to the inborn inclination to handicraft, and that guidance in its use, for want of which so many young men now drift into overcrowded and uncongenial occupations, or lapse into idleness or vice.

GEO. L. CHANEY,
FRANK ROWELL,
ABRAHAM FIRTH,
Committee on Report.

AN INTERESTING HAND-BOOK.

The experience of the association in carrying on this school led Mr. Whitaker, of the Massachusetts Institute of Technology, who had much to do with arranging the course of shop lessons, to suggest to the association the preparation of a manual, or hand-book, for such instruction. This resulted in the preparation and publication of such a work.* The little book itself is an object lesson on one of the many uses of drawing, for its admirable illustrations, showing the position of the body and of the hands and tools during the different mechanical operations, are better than many times the number of pages of descriptive text could have been.

The report made by Professor William R. Ware, chairman of the committee charged with the duty of preparing the manual, is of interest as showing how much of thought and care may be given, and how many minds may unite, in the production of even so small a book in bulk. To this little hand-book of 100 pages no less than fourteen persons are recorded to have made important contributions, while due credit is also given to a treatise prepared by Charles Holtzopffel, of London, so long ago as 1835.

As the introduction by Rev. Mr. Chaney sets forth, in brief, the purpose of the manual and the practicability of giving similar instruction in connection with the public schools, it is given in full:

INTRODUCTION.

This book aims to give, in fourteen chapters, directions and exercises for the use of the Wood-working Tools. Like other text-books of its kind, it will best accomplish its purpose in the hands of an intelligent and practical teacher, who may use it for his own guidance in conducting a class. At the same time, it is so simply written and so amply illustrated that any bright boy will find the book alone a great help in his endeavors to learn the right way of using common tools.

The book has been prepared for the Industrial School Association of Boston. That society, having conducted successful industrial schools during the winters of 1876–'77 and 1877–'78, at 23 Church street, concluded to offer its apparatus and the results of its experiments to the city in the hope that such schools would be maintained at the public expense. Meantime, the society appointed a committee to embody the valuable experience gained in its schools in a manual of instruction.

This manual, with the accompanying account of its preparation, is their report.

The society hopes that the public will share its satisfaction in the work of its committee. The lessons are few in number and simple in character. They aim only to give an elementary training in the manipulations common to all wood-working trades. But it is not chiefly in the interest of these or of any other trades that this course is offered to the public. Lessons like these, given at the same time with the studies now pursued in our grammar schools, would relieve the weariness of purely mental exercises, and give a new zest to their pursuit. A single ward-room, like the one used by the school in Church street, in any city for the six months from December to May, during which time it usually lies idle, with very little expense beyond the original plant and a moderate salary to the teacher, would meet all the needs of three or four of the largest grammar schools for boys. Three such supplementary schools, if used in turn, would amply satisfy all the rightful claims of industrial education of this kind upon the school system of such a city as Boston. At so small an outlay of attention and money might the native aptitude of American youth for manual skill be turned into useful channels. In so simple a way might the needed check be given to that exclusive tendency towards clerical rather than industrial pursuits which the present school course undoubtedly promotes.

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* Wood-working Tools; How to Use Them. A Manual. Boston: Published by Ginn, Heath & Co., for the Industrial School Association. 1882. Pp. 102.

GEORGE LEONARD CHANEY,
President of the Industrial School Association.

Applicants for further information may address Miss S. C. Paine, secretary, Brimmer street, Boston, and Rev. George L. Chaney, 7 Tremont Place, Boston, Mass.

The following paragraphs from the report of the school committee of Boston for 1882 (see pages 26 and 27) continue the history of this experiment·

INDUSTRIAL EDUCATION.

The Industrial School Association having for several seasons successfully conducted schools for instruction in the use of wood-working tools, and having prepared for the guidance of such schools a manual of proved educational value, offered to the board the use of their apparatus, and petitioned that the masters of the Dwight and Sherwin Schools be permitted to employ them for the benefit of such of their pupils as would, in their judgment, be best fitted for such instruction or most deserving of it. The association offered to defray all expenses of the cost of tuition for the year. This generous offer was accepted by the board, and the principals of the above-named schools were authorized to permit such pupils as they should select to receive such instruction, at such times as would least interfere with progress in their regular studies. Owing to the difficulty in obtaining suitable accommodations, it was decided to occupy one of the vacant school-rooms in the Dwight School-house and to confine the experiment to that school. The report of the principal of the Dwight School, which is an interesting document, for which already a great demand is made, gives in detail the methods pursued and the results attained. * * * There can be no doubt of the advantage of such instruction; the difficult problem which is presented is whether such instruction can be practically and profitably given in connection with the regular school work, and under the management of the board, without interruption and detriment to the regular work of the schools.

In the report here alluded to* Mr. James A. Page, the master of the Dwight School, says:

On the first Thursday of January the instructor gave his opening lesson to a class of eighteen boys; all who could be accommodated at the three benches at one time. These boys had been selected by myself from the graduating class, without reference to their standing, and no conditions were made with them except that they should not fall behind in their regular school work. Another class of the same number was selected from the second, third, and fourth classes, in order that the experiment might be tested by a wider application to ordinary grammar-school material. Many of these latter had already handled tools to a certain extent, either at home or in their fathers' workshops.

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*School Document No. 15, 1882. Report on Industrial Instruction in the Dwight School. October, 1882. Boston: Rockwell & Churchill, city printers, No. 39 Arch street. 1882. Pp. 11.

> In arranging the practical details of the school with Mr. Bachelder it had been agreed that school discipline should be maintained throughout the sessions; that the programme should be carefully written out on the black-board; that each boy should be marked on the work done, and that a record of it should be kept. All this was faithfully carried out, and contributed, as I think, largely to the final success.
>
> From this beginning to the close the school went on with unbroken and successful regularity. The teacher was promptly on hand, the order was good, the pupils interested. It was delightful to see the eager desire manifested everywhere in the room to do the day's work well. * * *
>
> I consider that the results go far to prove that manual training is so great a relief to the iteration of school work that it is a positive benefit, rather than a detriment to the course in the other studies.

Mr. Page closes with a statement of his belief that advance in public school education is to be made in this direction; his conclusions, derived from practical experience, are here given:

> But I have a conviction, and with permission beg to state it here, that this instruction is surely in the line of the teaching that is to be. I would be glad, therefore, to see the experiment still further tried, and all the experience which has been gained, and all the plans which have been essayed, fully formulated, availed of, and worked out into practical details, so that, by and by, at the proper time, the best kindergarten work, the best object-teaching, and the best methods of manual instruction shall be known; and, furthermore, shall be "organically combined with the whole scheme of education, and be made to support and coalesce with all the other studies of the child."
>
> It is easy to see that this hand instruction may be made the means of teaching whole chapters of arithmetic more thoroughly. I have seen it made the means of teaching geography and natural history effectively in our own school.
>
> There are high authorities who believe there can be no thoroughly clear, vigorous, and enlightened brain without the cultivated hand. Such are Sir Charles Bell, the author of the Bridgewater Treatise on the Hand, and Dr. William B. Carpenter, the physiologist, now visiting this country. If these men are right, then manual instruction introduced into our schools would be a step forward, because it would have a special value of its own in developing the mind, which is the avowed purpose of all schools.
>
> The great difficulty will be the lack of competent teachers. But that difficulty may be met as it has been successfully met once before. What has been done in the matter of drawing may yet be done in industrial work. A corps of teachers, as suggested by General Walker, may be furnished by the Institute of Technology; and that institution may eventually do for industrial what the Normal Schools of the State have done for general instruction. * * *
>
> JAMES A. PAGE.

Details of the lessons and the cost of tuition, etc., are appended. The total cost of giving, during nine months, to thirty-six boys, in two classes of eighteen each, one lesson a week, of two hours' duration, was $711.95.

SUPERINTENDENT SEAVER REPORTS IN 1883 ON INDUSTRIAL TRAINING.

The subject of industrial education is discussed at length by Mr. Edwin P. Seaver, superintendent of the public schools of Boston, in his third annual report, dated March 31, 1883. (See pages 34 and 35, inclusive.) The Dwight School experiment, just recorded, and the mechanical schools of Washington University, St. Louis, and of the Massachusetts Institute of Technology are treated of at some length. This report is of special interest because of its recital of the historic policy of the city and State towards public school education,—the recognized duties of the community to the children in the matter of education,—from which it appears that the future probable employments of the pupils have, in Massachusetts, been always recognized as the essential need to be provided for in any plan of public education. *

That such comprehensive views of the educational duties of the community are not universally held throughout the United States incidentally appears in a speech recently delivered in Paterson, N. J., by the Hon. William Walter Phelps, M. C., who, while ably urging the importance of some industrial training in the public schools, takes occasion to describe the kind of free public schooling which it is incumbent on the community to provide. The extracts from this address, which here follow those from Superintendent Seaver's report, are given to show the wide extent of interest felt in this question, and, also, how those entertaining widely differing views as to the extent of the educational obligations of the State, are yet agreed as to the need and feasibility of introducing some form of industrial training in the public schools; for it will clearly appear, when contrasting the remarks of the speaker with these official statements of the Boston Superintendent, that a very different estimate of the obligation of the State and the community towards the education of the children, is held by the citizens of Massachusetts, from that presumably held in New Jersey; still, since, as to the needs and advisability of some elementary training in industries in the public schools, the Boston Superintendent and the New Jersey Congressman are in accord, the consideration of the advisability of public provision for subsequent training can wisely be deferred till the first has been secured. Both are agreed that some industrial training is both desirable and practicable.

On this topic Superintendent Seaver says:

INDUSTRIAL EDUCATION.

In what ways, if in any, can the public schools be made to meet the popular demand for industrial education?

This question may well occupy the attention of those who care for and control public instruction, because such is the growing belief in the importance of industrial education that people are beginning to invoke the aid of compulsory legislation in its behalf. * * *

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* For a fuller setting forth of the Massachusetts ideal of a system of free common schools, see extracts (Appendix I) from the eloquent reports made by Horace Mann when Secretary of the State Board of Education.

The importance of this subject will be apparent from a glance at statistics. By the last census there were, in Massachusetts, about 721,000 persons engaged in all the various employments. Of these, almost a half were engaged in manufactures; less than one-sixth in mercantile pursuits; less than one-tenth in agriculture; and less than one-twentieth in all the literary, professional, and civic employments. About one-fifth are classed as domestic servants and unskilled laborers. These exact proportions, of course, do not hold for Boston taken by itself, for here the commercial and professional classes are relatively larger, while the agricultural class counts for nothing. But it is well known that Boston is the centre of very large as well as very numerous and various manufacturing interests; and that, consequently, about as many of her youth are destined to industrial employments as are destined to all other employments taken together. This is enough to show the importance of industrial education.

Now, if it be admitted as a principle that public education should have some regard to the probable future employments of the young in any community, there can be little question about the propriety of including in our scheme of public education so much of industrial education as can be given better at the public cost than in any other way.

Industrial education is even now not unknown in our schools. We recognize it in the drawing, which is taught, not as picture-making—a pretty accomplishment—but as a language for the expression of the facts of place and form. It is a training of the eye and hand as skilful servants of the intelligence—a training of the highest use to artisans of every name. It is also a means of developing a sense of fitness and proportion in design, a way of educating the taste in decoration—all which is industrial art education. Then there is sewing, which is taught to girls with a very direct reference to their future employments. Introduced at first as a charity, it is now recognized as a very legitimate charge upon the whole community, because it prepares so many girls to be useful members of society. Many a woman gratefully remembers that she owes remunerative employment, and consequent self-respect and happiness, to the school instruction she received in this branch of industrial education.

These are recent additions to the school curriculum, but the principle on which they are justified has long been recognized as sound and beneficial.

Having thus recorded the recent steps towards industrial training in the schools, the superintendent proceeds to show how, step by step, the schools of Boston have advanced to meet the needs of each generation as they occurred, and then, by a natural transition, he proceeds to portray the needs of the present:

In 1821, while Boston was yet a town, and mainly a commercial town, a school of higher grade was established to meet a want then felt for a form of public education better suited to the needs of boys whose destination was not college and a profession, but the store and the counting-room. This was the English High School, which has, ever since its establishment, aimed to give its pupils a good commercial education. Not that its course of study has been narrowly limited to that, but that has always been a strong feature. Book-keeping and commercial arithmetic are here taught to the future accountant, and navigation used to be taught to the possible ship-master, for the same reason that drawing is now taught to the future artisan and sewing to the future dressmaker or housekeeper.

In the Evening High School phonography and in the Evening Drawing Schools draughting are taught to pupils who propose to make direct practical use of their acquirements in their every-day employments.

But the most conspicuous recognition of the principle that public education should be shaped with reference to the probable future occupations of the pupils appears in the public Latin schools. Here future lawyers, physicians, and clergymen, teachers, authors, and journalists, are helped far along on tho direct road to their several professions. This provision for the liberal education of professional men and women results from those generous and enlightened views of the public good which have shaped our educational policy from the earliest times.

A thorough education for professional men was felt by our forefathers to be a prime public necessity, and this was provided for at the public cost, partly by maintaining schools to prepare boys for college, and partly by grants of money to support colleges. Later the need of a liberal commercial education was recognized, and that, too, was provided for in the public-school system. To-day the great educational want of our young people is better preparation for the industrial employments which so many of them are to follow.

The old apprenticeship system is gone. The great revolution wrought by steam and machinery in all branches of industry, particularly by massing laborers in great establishments and specializing their work, has left little room for the general training an apprentice needs. Such work as an apprentice must do in order to learn thoroughly his chosen craft is not conveniently furnished in the large establishments of the present day; and even if it were otherwise, such work would possess very little value for his employers. The journeyman of limited skill, who is kept continually at one process or part of a process, can earn more for his employer than can the apprentice, who must pass from one process to another for the sake of learning them all. And so it has come to pass that the boy who wishes to become a skilled artisan finds his way blocked by the unskilled journeyman. If the necessity of earning wages constrain him, he submits to the inevitable, learns a process or two, and ends by becoming himself also an unskilled journeyman. This partly explains why the supply of skilled artisans in many branches of industry has become inadequate, and why employers are looking abroad to supply the deficiency.

Now, there is such a thing as "a liberal education in the mechanic arts," just as there is a liberal education in science or in letters. It is called a liberal education because it consists in learning, not the specialties of a particular trade, but the fundamental arts that apply in many trades. As a liberal education in science and letters is what the future professional man most needs, so a liberal education in the mechanic arts is what the young artisan most needs as a preparation for his chosen trade. But modern shops do not give this. Shall public instruction undertake to give it?

Assuming the validity of the principles which have prompted a generous educational policy hitherto, the question now is whether it is not in the line of that same generous policy to embrace in our scheme of public instruction such forms of industrial education as have been proved to be practicable and beneficial. In other words, considering the number of people deeply interested, would it not be illiberal and unwise not to provide for such education?

If this be granted, the next question is, What forms of industrial education have been proved to be both practicable and beneficial?

The answer to this question is suggested in part by the very interesting and successful experiment made in the Dwight School a year ago. The use of the common wood-cutting tools of the carpenter was taught to some of the boys two hours a week for the greater part of a school year. At the same time, the boys continued their regular school lessons. The experiment proved, if any proof were needed, that boys take to shop work under good instruction with great interest. The progress made was very gratifying, and in some cases quite surprising.

He then proceeds to consider the work in the comparatively recently founded manual training schools of the Massachusetts Institute of Technology, and the Washington University, St. Louis, which have been so successful as, in his judgment, "to leave no doubt that they are meeting a real want in the community." After giving several extracts concerning the St. Louis school, he concludes that that school is not wholly adapted to the present grammar schools, and proceeds to sketch the kind of school that, in his judgment, would be applicable to Boston; as this would hold good, "*Mutatis mutandis,*" in the case of other town and cities, this part of his report is here given:

SUGGESTIONS FOR A PUBLIC MANUAL TRAINING SCHOOL.

The central idea of the school [referring to the St. Louis school], that of combining into one course of instruction shop work and ordinary school work in about equal proportions, is not one which can be well carried out in our grammar schools. Even if the purpose for which these schools exist—elementary general education—admitted the introduction of shop work, which, in my judgment, it does not, yet the great expense of providing many separate schools with shops, tools, and machinery would make the thing altogether impracticable. Moreover, it should be borne in mind that shop work is not suited to the strength and stature of boys under fourteen years of age; and four-fifths of the boys now in the grammar schools are under that age.

The best provision, therefore, would be to establish, at some central point of the city, one manual training school, to equip this school thoroughly for its work, and to admit to it, under suitable restrictions, boys from all parts of the city. A single school, large enough to accommodate two or three hundred pupils, would be the most economical provision that could be made. By changing the classes in accordance with a properly arranged time-table, the shops and tools would be in use all the time, and the instructors, both in shop work and in ordinary school work, would be constantly occupied. In this school the boys should continue their ordinary school work about two hours a day, attend to drawing one hour, and work in the shops two hours more. If the course were made three years long, the intellectual work would cover the upper part of the grammar school course (or the most essential studies in it), together with some parts of the high-school course. The manual training could be brought up to the point of enabling pupils, on leaving school, to enter many manual employments with advantage to themselves and, therefore, to the community. Not that the school would or could teach any single trade, as would be done in an apprentice school; but its pupils would be so well grounded in the general principles of many trades that the specialties of each trade would be very quickly learned. The experience of the St. Louis school, as well as that of other similar institutions, leaves little doubt on this point.

On the other hand, a manual training school that should undertake much less than is here suggested would be likely to fail from the mere inadequacy of the means to the end proposed. And this is one reason more for undertaking only one school at first.

There are now about two thousand five hundred boys in the grammar schools who are fourteen or more years old. Some of these would be greatly benefited by joining the manual training school; and their parents would doubtless be glad to have them allowed to do so. Then there are in the high schools some boys who would be better placed in a manual training school. Furthermore, there are many boys who are now withdrawn from school at or before the age of fourteen, but whose parents doubtless would be very glad to keep them longer in school if the prospect were that the school would help them well on towards earning a living by some form of skilled labor.

Out of the three or four thousand boys of suitable age in the city, it ought not to be unreasonable to expect two or three hundred pupils for a good manual training school.

* * * * * * *

But it is unnecessary now to go into details. The project I have outlined and now recommend is that there be added to our public-school system one manual training school, thoroughly equipped for its work, occupying a place in the system side by side with the high schools, and open, under suitable conditions, to boys of fourteen years of age and upwards. This recommendation has been made that there may be something definite and tangible to discuss and to urge upon public attention. If, as is quite likely, a better project can be proposed, then this one will have served a good purpose by calling a better one forth.

I am aware that such a school would be regarded for a time as an experiment, and properly so; but I believe the experiment needs only to be tried, under proper conditions and for a moderate length of time, to satisfy the community that money spent upon such a school would be most wisely spent. Said one of the benefactors of the St. Louis school, "I feel better satisfied with the money I have put into the manual training school than with any other money I have invested in St. Louis."

If Boston does not now feel quite ready to put the tax-payers' money into such a school, she might accept the co-operation of any of her wealthy and public-spirited citizens who believe that their money given to such a school would be well bestowed.

The address by Hon. William Walter Phelps, late United States Minister to Austria and now representing the Fifth Congressional District of New Jersey in the United States House of Representatives, was delivered at the annual dinner of the Board of Trade of the city of Paterson, N. J., June 6, 1883. Mr. Phelps, who was present as the member of Congress for that district, after a few opening words, drew the following graphic picture of this thriving manufacturing city—a city devoted to industry, and where, if anywhere, some training in industrial education in the public schools would seem most desirable:

They say that men live in the spray of Niagara and think nothing of its avalanche. So it seems to me that you toil away, contributing your quota to the busiest hive of human industry on the face of the earth, and never pause to note the hum or register the pulses of its intense activity. Step out of the whirl and look at your city as a stranger. Hear the stroke of 5,827 swarthy workers in metal as they hammer iron into an annual product which sells for $9,362,000. Listen to the lighter music of 14,665 men, women, and children, as they complete the silk-worm's task and sell the product for $16,635,000. Mark the products of flax, hemp, and jute which 1,650 men manufacture and sell for $2,450,000. And remember that all this is done in a little city that in 1880 had but 51,000 inhabitants. * * *

That was the population in 1880. But a special census shows it already 58,000; nor can you take up a paper of the State which does not paragraph some new enterprise or some new development to an old enterprise. * * *

After this striking picture of the busy and profitable work of the city, he suggested some needed changes that would make the city more beautiful and desirable as a home; such as the paving of the streets, the opening of a park, and the establishment of a public library and reading rooms. He then said:

EDUCATIONAL NEEDS.

But all these are the ordinary wants of growing and enterprising towns. Pardon me if I speak somewhat fully of a want not so generally recognized, but which I think imperative. The census I referred to shows that there are 16,381 children. I want these all educated, and I want these all educated by the city. But what kind of education? Only the education that makes them citizens. Other education is valuable—I am the last to decry it—but you have no right to tax the public that your children may get it. If you want to make them scholars, clergymen, lawyers, doctors, you must pay for it yourself. Paterson does not want its citizens all scholars or clergymen or lawyers or doctors. It would be a wretched Paterson if they were. But Paterson does want all its citizens educated so that they can discharge the duties of citizenship. And so does the Republic, which can only exist so long as its citizens can vote right and earn their own livelihood. These are the two necessities to republican citizenship—that a man should know enough to vote right and to earn his own living. That he may learn enough to vote right he should know how to read and write; that the State should teach him, and for that the State should tax all of us. So far we all agree.

INDUSTRIAL TRAINING DESIRABLE IN THE COMMON SCHOOLS.

But it is time now in the history of the country to take another step forward. It is the State's duty to not only give him the literary rudiments which shall enable him to know how to vote, but also to give him the rudiments of industrial learning, so that he may earn his living. There must not only be the public school that teaches him to read and write, but there must be the industrial school that teaches him how to work; or, what is better and simpler, the one public school should have a division of time, so that in certain hours the children should be taught to think, in others to work.

Now do not misunderstand me and think I urge the technical school. I do not. The technical school is a good one, just as is the law school or the theological seminary. But it is a gain to special industries and trades. These must take care of themselves and not tax the public to do it. All the public wants to do is to take the child and train him to use hand and eye; to give him those aptitudes with fingers and tools that when he goes out he is all ready to learn his trade. The industrial school is to teach him the reading and writing for his trade. Then he can acquire the trade that taste or fate gives him easily. And all of us should learn trades. The literary training no longer insures a livelihood. Not a man at this table is free from the importunities of men who want a chance to earn their bread by taking office, keeping books, or selling wares. But there is no place for them. Is there one of you who was ever harassed by the demand of the skilled artisan for work? The Germans know this. Just as the thought in their thinking bayonets conquered at Sedan, so their rule that prince and peasant shall learn a trade will conquer in the battle of peace. At Babelsburg, in the Emperor of Germany's private rooms, there are two plain oak chairs. They were made by the crown prince. His trade is that of a cabinet-maker.

But I am wearying you, gentlemen. If you will aid us to parks and libraries and good streets and industrial teaching, instead of Paterson occupying more space in New Jersey papers than any other two cities of the State, she will fill more paragraphs in the papers of the United States than any other two cities of the Republic.

ORIGIN OF THE AMERICAN EDUCATIONAL IDEAL.

In a recent address in Birmingham, England,* this subject of the relation of the State to the education of the people, was treated in a most interesting and philosophical manner by the Rev. E. F. M. MacCarthy, M. A., vice-chairman of the Birmingham school board.

As extracts have just been quoted from Superintendent Seaver's discussion on the same topic, and also from the incidental allusions to it by the Hon. Mr. Phelps, it may not be without interest or profit to listen to this dispassionate observer, who, from the vantage ground of distance, traces the American system of free popular education for all to its true source.

It was due to no accident that the foundations of education in this country were laid broad and deep, and the subsequent development of a complete system of public education as now possessed by some of the Western States is seen to be but the logical outcome of the action of these early settlers of Massachusetts.

Having discriminated between the two early settlements of Massachusetts, the colonists of the Mayflower and those coming in 1630 and subsequently, he says (having recited the causes of the first and second exodus from the mother country), that the interests of high learning were naturally fostered by those of the second group of colonists:

THE ENGLISH ANTECEDENTS OF THE NEW ENGLAND COLONISTS.

For these latter were prominent men in this country before they brought a nation to its birth in another. Many of them had sat in Parliament, and had taken an active part in the protests against illegal taxation and arbitrary government. Many of them were wealthy. There were country squires, clergymen, lawyers, merchants, the relatives of the greatest men of the day, among their number. Winthrop, the first Governor of Massachusetts, was a country gentleman of good estate in Suffolk; the Vanes and Bellinghams had been land-owning families in England for centuries; Eaton, another prominent colonist, had been English Minister at the court of Denmark.

Here, then, we are in the very midst of those classes of English society who (as I have pointed out), had been reached by the literary as well as the political wave of the sixteenth century, who had come under the training of the Public schools and Grammar schools, and largely of the Universities themselves. What a contrast here to the class of people who generally compose the settlers in a new country! The number of learned men among these later Presbyterian colonists of America is certainly most extraordinary, and it explains much of what has surprised Englishmen since. It has been said that between 1630 and 1690 there were in New England as many graduates of Oxford and Cambridge as could be found in any population of the same size in the mother country.

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* The Growth of the English and American Educational Ideals. An Address by Rev. E. F. M. MacCarthy, M. A., Head Master of King Edward's Grammar School, Five Ways, Birmingham, and Vice-Chairman of the Birmingham School Board. Birmingham: Printed by Robert Birbeck, Broad Street. 1884. Pp. 24.

Much is intelligible now which must appear so unaccountable to those who have fancied that the band of small tradesmen, farmers, and artisans, known as the "Pilgrim Fathers," laid the foundations of American educational life. And yet, the more one thinks of it the more remarkable and unexpected does this uprearing of a Latin school and an old-world type of University appear, considering when and where it took place.

URGENT AS WERE INDUSTRIAL NEEDS, THEY HELD INTELLECTUAL NEEDS PARAMOUNT.

Surrounded, as these exiles were, by the realities of hard and stern material conditions requiring all their energies, more than all their knowledge, and an inordinate sacrifice of human life to reduce to subjection, yet their first thoughts were directed, not to the training of the hand and eye, muscle and sinew, but of brain; and to the humanistic, rather than to the realistic, side of accessible knowledge. This fact, however, testifies to the tremendous influence of the literary impulse of the sixteenth century; and, while doing so, also affords us a measure of the magnitude of that impulse. In freshly-cleared backwoods, where counter influences were largely present, strong enough, one would think, to destroy its action altogether, the phenomenon is almost more strikingly exhibited than in England itself; the wave is, if anything, higher. Nay, it is higher. For look what these men did! Not content with providing educational machinery for the well-to-do of their community, they took the next step. As has been well said, "Theirs was a social structure with its corner-stone resting on a Book." No single member of that society could be allowed to grow up in ignorance of that book and of the structure of society based upon it. Universal education was a universal necessity. The public sentiment, born in the *old* world, but finding free play for development only in the *new*, was strong enough to lead at once to the next step in educational legislation, and as early as the year 1649 (*i. e.*, within twenty years of the Massachusetts settlement), every New England colony except Rhode Island had made public instruction for the whole population compulsory by law.

THE AMERICAN IDEAL OF UNIVERSAL EDUCATION AN EVOLUTION, NOT A REVOLUTION.

We have seen, then, that the English settlers in America evolved an educational ideal which embodied a *complete* system of education covering the whole range of existing knowledges, not only Latin and Greek for the few, but reading, writing, and arithmetic for the many, supported by the taxation of the whole people, managed by their representatives, and open to all without distinction of class and without school fee imposed upon the individual scholar. And they did all this, because they were what they were, because their past history was what it was, and because their educational traditions derived from their former life in England led them whither it led them. True, they had no reserve funds with which to *endow* their schools, and were not likely to have them, and so they had to cast about them for something to supply the place of those benefactions with which education had been supported in England, and they found it in the form of appropriations from the common fund of the community, and not in the shape of school fees. This latter plan is the first thing that would occur to nineteenth-century Englishmen with their traditions of later growth; it is the last thing which would or did occur to the Englishmen of the sixteenth century. However much we may have become familiar with school fees since, so much so as to have lost sight of the natural history of their growth, and, in preaching the nineteenth century gospel of elementary education for the masses, to have gone counter to the wisdom of our ancestors, it is a fact that school fees were as good as unknown to Englishmen of the sixteenth century. And so they did not, at first, enter into the school system of the New England settlers.

Thus we see, as, if there is any philosophy in history, we might have expected to see, that the American common school system, covering free secondary as well as primary education, was no abnormal phenomenon, no new creation, but a natural growth from antecedent experience and race instincts. This American Ideal, grand as it is in the breadth of its conception, noble in the beneficence of its purpose, fruitful, as it has proved itself to be, of such splendid political, social, and material results to fifty millions of people, was, after all, a development of an English Ideal, only modified and adapted to a new environment.

CHAPTER III.

THE EDUCATORS THEMSELVES THE LEADERS IN EDUCATIONAL REFORMS AND ALWAYS THE SEVEREST CRITICS OF THE SCHOOLS.

How changes in educational methods are effected—Public opinion informed and aroused by educators—Deficiences in the public school methods of education long recognized by leading educators—President Newell's address at Louisville, in 1877, the precursor of the Public Manual Training Schools—His arguments for the proposed new methods of training—His address at Philadelphia, in 1879, on "The Beginning of Industrial Education"—Mr. Leland's Philadelphia experiments in teaching elementary artistic manipulation—Training in artistic knowledge and dexterity more urgently needed in the United States than skill in mechanics.

AMERICAN EDUCATORS EVER IN THE VAN OF EDUCATIONAL PROGRESS.

Whatever of just criticism the managers of the public schools throughout the country may have incurred, it cannot be charged that the leading educators have been blind to the exigencies of the situation, or have ignored the difficulties which accompany every new effort to adapt the public schools to public needs as they arise, or that they have avoided their full and free discussion.

No severer critics of obsolete methods, no acuter observers of new needs, no readier inventors of practical solutions of these knotty problems, have anywhere been found than among the educators themselves.

STAGES OF EVOLUTION.

The history of the development of the public school systems,—the evolution of the public school, is but a repetition of similar steps. Usually some enthusiastic citizen, or association of citizens, ventures upon an educational experiment, either independently or in conjunction with the public educational authorities; as, for instances, when permission was obtained to place the statuary in the Boston girls' school at the cost of the individuals, or when the Whittling School was started as a private school by some benevolent citizens, to be subsequently removed to one of the city school buildings, as has just been recited. The educators and the public watch these experiments, and if they prove successful they are ultimately incorporated into the public educational system, as were, long ago, the "Teachers' Institutes" and the "Normal Schools," which Horace Mann introduced to Massachusetts, a generous friend having given him the money to defray the first cost of the experiment, of which the State, and ultimately the Nation, has reaped the benefit. Before a new departure can be made in any public system, the public must be convinced of its utility ; hence the necessity for public discussion.

The educators, by their publications and meetings for public discussion, have always largely contributed the materials for informing and convincing the public; as reference to the files of the leading educational journals, to the various publications of the United States Bureau of Education, to the official educational reports of the several States and cities, and to the published reports of the annual conventions of State educational officials and of educators, abundantly demonstrate.

Before proceeding with the accounts of the various efforts made by private citizens to supplement the public school systems, and while freely setting forth the deficiencies in the public schools which these various night schools, mechanics' institutes, etc., have been devised to supply—to poorly supply, because sporadic and individual efforts can never prove adequate to public needs, for which wisely directed public effort is alone competent to provide—it is but simple justice to call attention to the fact that these accusations against the efficiency of the public schools, which now are uttered so glibly by many, originated with the educators, the officers and teachers themselves, who felt the deficiencies of the schools and the needs of the school children, and have not ceased to call public attention to them.

EDUCATORS THEMSELVES FIRST TO RECOGNIZE NEED OF CHANGES.

This pressing and ever increasing necessity of devising some practical plan for remedying admitted deficiencies in public school training has long been widely recognized among educators. The history of the last twenty years is full of their efforts in this direction. Superintendents Philbrick, in Massachusetts; Harris, in Missouri; E. E. White, in Ohio ; MacAlister, in Wisconsin; Newell, in Maryland; Mr. John T. Morris, president of city school board in Baltimore, and Superintendent J. Ormond Wilson, in Washington, D. C., with many others, scattered all over the country, have made notable efforts to aid in giving to American school children the fittest possible preparation for their life work; and their various efforts have been rewarded with a good measure of success, as the increase in the number of public Kindergartens, in the spread of industrial drawing in public schools of all grades, the introduction of industries in girls' schools, the multiplication of technical industrial institutions, and the vitality of the general movement now going on towards some form of practical elementary instruction in industries in public schools, abundantly witness. These efforts have been thoroughly studied, reported, and discussed in the annual gatherings of educators.

Before giving the account of the first successful attempt to attach schools of manual training to the school system of a city, which was secured by the action of President Morris and his enterprising school board, of Baltimore, in founding such a school, an experiment which will be watched with great interest, it is due to history to give, in brief, an account of the occasion which gave to this movement for some form of manual instruction in schools a wide publicity.

PRESIDENT NEWELL'S LOUISVILLE ADDRESS, 1877.

This was the annual meeting of the National Educational Association at Louisville, Ky., August 14, 1877, when a notable contribution to this discussion was made by the distinguished educator, the Hon. M. A. Newell, State Superintendent of Education and Principal of the State Normal School of Maryland, who, as president of "The National Educational Association," took for his inaugural address the topic of "Education and Labor." In this discourse he met squarely the question of the proper function and province of the public schools.*

He narrows the question, for the purposes of the discussion, to a consideration as to whether the public schools are doing what the public has a right to demand in the way of fitting young people, who must "live by the labor of their hands, to become intelligent, moral, and industrious citizens." He affirms that the public school does not go low down enough, does not reach the lowest stratum of population, "the very classes that need it most," and, also, that its plan of gradation does not look to the best preparation possible for each child who is forced to leave school at any given stage in the course, but is arranged with the single view of best fitting the child to take the next step in school progress. On this topic he says:

> Taking the most favorable view of the average programme now in use in our common schools, it may be conceded that each step forms the very best preparation for the next higher step, and that the course, as a whole, is well fitted to prepare the pupil who completes it for the ordinary duties of life. But the true theory of a common-school programme is that every step shall be the best possible preparation for stepping out rather than for stepping up. It is conceivable that the two may coincide, and I have been told that in St. Louis they are believed to coincide, the fitness for promotion in class being regarded as the best attainable preparation for the work of life at the given age. But looking at the ordinary and average common-school programme in the United States, it will be found that the interests of the few who complete it are studied more than the interests of the many who do not complete it.

Many practical suggestions as to methods of economizing time in school training are offered. Then he says:

> I remark now, in the third place, that *a knowledge of some form of industrial labor is at least as necessary as a knowledge of books*, and that the State which

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*Education and Labor. Inaugural address delivered before the National Educational Association at Louisville meeting, August 14, 1877, by M. A. Newell, president. Baltimore: Kelly, Piet & Co., printers. 1877. Pp. 16.

acknowledges its obligation to teach children to read cannot logically deny its obligation to teach them to work. I approach this part of my subject with great diffidence, for it is beset with practical difficulties; but the times force it upon our notice, and a full and calm discussion may serve to prepare the public mind for changes which, either with our aid or in spite of our opposition, are sure to take place.

He then reviews the changes in the progress of the country that have taken place, and shows that definite instruction must needs be substituted for the former methods of teaching trades and employments, if the youth are to be taught at all.

Then he shows how, when a boy, untaught to work, commits crime and gets into prison, the State, that neglected to teach him any useful employment in his innocent youth, now endeavors to train him in some form of manual labor!

But, says an objector, it is the business of the parent and not of the State to give his child a trade. Herbert Spencer goes further, and says it is the business of the parent to educate the child, and the State has rightly nothing to do with education. Where are you going to draw the line? Shall the State teach the art of writing, but not of printing; the art of drawing, but not of wood-cutting; the art of composition, but not of book-binding?

Put the objection into plain English, and say the State must not teach anything by which a young man can make a living. But this would not be true, for you are willing to give him, at the expense of the State, enough of writing, arithmetic, and book-keeping to enable him to earn a living as a clerk, or so much of general instruction as will fit him to teach school; you object only to teach him to work with his hands. You give him free education from his sixth to his twenty-first year, provided he will confine himself to books, but if he wants to learn to *work*, you cast him off unaided, even though he should be an orphan and only twelve years of age.

There is no escaping from the argument that if the State, for her own protection, is bound to interfere to prevent children from growing up in ignorance, she is equally bound to prevent them from growing up in idleness. If parental duties and obligations are insufficient to meet the one case, they are equally insufficient to meet the other.

Then comes his suggestion, which in February, 1884, the school authorities of the city of Baltimore practically endorsed by founding the Manual Training School as a free public school:

THE PUBLIC MANUAL TRAINING SCHOOL SUGGESTED.

Do I think it possible to attach workshops to our public schools? Certainly not; but I do think it possible to have public workshops where boys can learn trades as well as public schools where they can learn letters. And just as we transfer the few from the State school to the State college, where they learn to be thinkers, I would transfer the many from the city school to the city workshop, where they would learn to be workers.

Superintendent Newell returns to this subject again in a paper entitled "The Beginning of Industrial Education," read before the Industrial Department of the National Educational Association, at the annual meeting in Philadelphia, August 29, 1879.

The following extracts from this interesting address, while full of valuable practical suggestions, well illustrate the fulness and frankness which characterize the consideration and discussion of these problems by the leading educators in their public assemblies:

HOW PUBLIC OPINION HAS DEVELOPED IN THE PAST.

Looking at the history of common-school education, we can recognize three distinct steps in the march of public opinion, and we may expect to make the very same steps on our way to a universal system of manual education:

1. The recognition of the necessity of universal elementary education. Not the utility merely, nor the advantage, nor the propriety, but the absolute necessity of educating the intellect of those who are to be the rulers of the Republic.

2. The conviction that private and individual efforts are totally inadequate to the work of universal education.

3. The acknowledgment that the public money may rightfully be used for this purpose, and that under certain circumstances it becomes a duty so to use it.

THE MOVEMENT FOR INDUSTRIAL EDUCATION MUST ADVANCE BY SIMILAR STEPS.

Industrial education cannot have a beginning until the same propositions are admitted with reference to it. The education of the hand must be recognized to be just as necessary as the education of the head. When this is once accepted the other propositions—the inadequacy of individual efforts and the right and duty of the people in their collective capacity to do what the individual has failed to do—will soon become apparent. * * * The urgent necessity of manual education has not yet been fully admitted, and yet every valid argument in favor of educating the head at the public expense may be urged with equal force in behalf of the education of the hand. Is it necessary for every free citizen to know how to vote? It is equally necessary for him to know how to earn his living. Is ignorance dangerous to the commonwealth? Equally dangerous is idleness. * * * In like manner every objection which has been made against manual education has already been urged against intellectual education, and has been weighed in the balances and found wanting. * * * The people must be made to feel and know that against organized idleness and vice there is but one sure protection, the organization of skilled and honorable labor. The common school can no longer save us unless it is supplemented by the common workshop. The rewards which at the beginning of the century were promised to good scholarship must now be paid to good workmanship, founded upon sufficient scholarship. The battle of the schools must be fought once more, but this time for the training of the hand in addition to the cultivation of the intellect. Of old it was claimed that parents had a right to bring up their children in ignorance if they chose; but public opinion said, No! for ignorance in the masses means death to the commonwealth. To-day you will be told that parents have a right to bring up their children in idleness if they choose. But the *vox populi* will again be heard to thunder, No! for the idleness of the masses would be fatal to the Republic. It was said of old in relation to elementary education: "Let it alone; it will regulate itself; men are moved by self-interest, and it is the interest of parents to educate their children; the parental relation must not be assumed, parental functions must not be discharged by the State; if the State should teach children to read it would be equally bound to supply them with literature on which to exercise their faculty after they have learned to read, which would be agrarianism, communism, Fourierism, or some worse *ism*." But all this special pleading was answered by a simple statement of fact. The parents did not educate their children. According to all the rules of the political and social economists they ought to have done so, but in fact they did not. The State, then, was obliged to step in and perform the duties which the parents had neglected. * * * In like manner, though interest and duty and parental affection all combine to enforce on parents the duty of bringing up their children to some form of productive labor, yet the obligation is largely disregarded, and the neglect is greatest just where it can be most hurtful—in our large cities. But the safety of the country demands the suppression of idleness and the encouragement of industry by elevating manual labor to its proper rank among human employments, and the State must, for her own protection, assume the responsibilities which the parent has disregarded.

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PRACTICAL SUGGESTIONS.

In conclusion, what is the duty of the hour? What can practical teachers and directors of educational affairs do to aid in this beginning of industrial education?

1. We can aid in the dissemination of sound theoretical views on this subject, using the newspaper and the periodical press as our instruments.

2. We can insist that drawing (which holds the same place in industrial as reading does in intellectual education) shall be efficiently taught in every school and in every grade.

3. Those forms of practical work which can be introduced into our present schools without causing confusion should be encouraged. It is hard to find work of this kind for boys. Probably some kind of wood-work—cutting, fitting, carving—might be done as a home exercise, instead of the burdensome and useless memory tasks. But girls can be taught to sew, darn, knit, patch, cut, and fit in a series of practical lessons as closely graded as the lessons in a series of reading books.

Lastly, we may be able to aid in establishing, in one or more cities where the means can be procured by private subscription, a workshop after the Russian model, which, for industrial training, shall be to the graduate of the elementary school what the high school or college now is for intellectual training.

All this being accomplished, we may not even have made a real beginning of manual education, for that cannot be achieved without a long and hard-fought battle; but we shall have made a reconnoissance in force which will reveal the strength of the enemy's position and show us where to plant our guns and how to marshal our forces.

As already stated, the school authorities of the city of Baltimore, a few years after the delivering of these addresses, undertook the duty of devising a practical plan for the introduction of manual training as a part of the regular course of education in their public schools; which resulted in the adoption of the plan of establishing a special school with this feature incorporated, as suggested by Professor Newell in the addresses just quoted.

An account of this school, which is possibly to be the precursor and type of a distinctive class of future high schools to be established in the larger towns and cities of this country, is given in detail in a subsequent chapter.

MR. LELAND'S EXPERIMENTS IN PHILADELPHIA.

In Philadelphia the problem of affording to public school children training in industrial arts has been approached from yet another quarter. Mr. Charles Godfrey Leland the well known author began there, some years since, an experiment in instructing children in minor artistic industries, which was subsequently adopted by the school authorities. He has since been supervising the conducting of special classes of scholars from the public schools, in the Hollingsworth School Building, next door to the Academy of Music, Broad street, Philadelphia. An interesting account of his methods, taken from an illustrated article contributed by himself to the *Century Magazine*, October, 1882, will be found in the appendix to this Report, together with extracts from his letters to the present writer further elucidating his plan.* As a full account of his theory and methods was, in 1882, issued as a circular by this Bureau,† which was widely distributed, the following brief statement, made in a note received from Mr. Leland, under date of October, 1882, must here suffice:

> 1. I would make hand work a part of all education in all schools, from infancy onward.
>
> 2. That, in the main, decorative art, as specially combining ease with utility, should be the first industrial work taught in schools.
>
> 3. That simple decorative outline design may be taught in far less time than is generally required to learn copying by the old method, and that when this is acquired, all kinds of *decorative* art, except painting, may be learned as almost one and the same thing, rudimentary panel carving, embossing, stenciling, etc., being merely outline drawing carried out with different implements.
>
> Even painting is simplified by leading the pupil up from outline through monochromes to blending.
>
> That this is all simply practical may be seen by visiting the school, where everything I have set forth in these propositions may be seen in practice.

As did Fröbel in his creation of the kindergarten, Mr. Leland avails himself of the child's eager curiosity and innate delight in construction, and also of the natural preference for lines of grace and beauty when once those lines are recognized.

That some remarkable results have been attained through his methods seems clear. Whether this plan can wisely be generally substituted in the schools for the thorough course of training in industrial art drawing, contemplated in the Walter Smith and other similar systems, may well be doubted. On the other hand, for many children at least, this training in the manipulation of the processes of the "Minor Arts" seems to promise quite as much in the development of dexterity and in the intelligent appreciation of artistic qualities, as is offered by the training in carpentering and blacksmithing, just now so popular.

ARTISTIC TRAINING DESIRABLE.

It is art-workers—workers capable of making beautiful articles like those now so universally imported from other countries because they cannot be made here—of which the United States is most in need. However, there is little danger of too much activity in these endeavors to reach a practicable solution of the problem, if only the various methods and experiments are critically and wisely examined and coolly tested. While there is, undoubtedly, some *best* way to teach any art or industry, and while a modest obedience to the leadings and suggestions of nature may direct the teacher to the discovery and use of simpler methods by which the faculties and taste of the child shall be more readily developed, so that it shall seem to acquire insensibly and without effort much that would otherwise only be gained by great exertion; still, after admitting all this, there should be great hesitancy in abandoning thorough training in the elementary knowledge and practice of any art, for such methods as seem to reach results with surprising ease, lest the sure knowledge, upon which future progress can alone be based, shall prove to have been sacrificed to a superficial facility of execution which arises solely from the simplest exercise of the faculty of imitation.

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*See Mr. Leland's experiment—"Hand Work in Public Schools," Appendix K.

†Circular of Information of the Bureau of Education, No. 4, 1882. Industrial Art in Schools, by Charles G. Leland, of Philadelphia, pp. 37.

If dexterity of copying given forms in clay, of hammering out easy patterns in brass, is to be taken as evidence of a thorough grounding in the essential elementary principles of art, needed alike by artist and artisan, then great mischief may result from a prevalence of these well-intentioned efforts; while, on the other hand, if they are rightly estimated, they may be made useful and profitable.

It will be well for all dilettanti patrons of art and would-be amateur artists, of whom there are many, to remember that, in Art as in Literature, there *is* no royal road to knowledge; and that any plan of art instruction which recommends itself as wonderfully easy of acquisition, invites distrust. To learn to draw correctly is the only sure foundation, and this is *not* acquired "in twelve easy lessons." So far as all these experiments in special training in industries or arts, are undertaken with a view to ascertaining their fitness for adoption in the public schools, they are of value; for, in any event, it will be profitable to learn definitely what can and what cannot be accomplished in the public schools. That elementary drawing can be successfully taught in all public schools has been demonstrated; that definite training in the mechanic arts can be taught to older boys in special schools has also been shown; that young children can be readily taught to make beautiful and salable objects, Mr. Leland affirms. How much of all this training in productive skill can wisely be embodied in or annexed to the public school systems, is the problem at present awaiting solution.

CHAPTER IV.

THE NEW DEPARTURE IN EDUCATION IN PUBLIC SCHOOLS.

The recent growth of the movement for industrial training in common schools—This movement a logical outcome of the successful introduction of drawing—As such its discussion is germane to this Report; even though it has no direct relation to the development of artistic industries—The era of Industrial Democracy had its birth in the modern investigations of natural phenomena as begun a century or more ago.—Contests between countries for supremacy in industries characterize the new era—The first World's Fair in Hyde Park an era making event—The new art educational movement in America dates from 1870—This movement largely due to the three distinguished men whose efforts are recited in Part I of this Report—The present demand for definite industrial training in schools, a second step in the movement then begun—What was shown by the first step—How the Centennial made the movement general throughout the country—The Boston experiment of 1870 marks the dawn of the new era.

THE INDUSTRIAL PHASE OF THE MOVEMENT.

During the three years that have elapsed since the chapters immediately preceding this were written the subjects of "Manual Training" and kindred topics relating to the possibilities of adapting various methods of industrial education to the exigencies of the public schools, have occupied the attention of educators, and the public, to an extent hitherto unprecedented.

This movement is, in the opinion of the writer, as stated in the opening sentences of Part I of this Report, simply the logical outcome of the experiment of introducing instruction in industrial art drawing in the public schools, initiated by the calling of Walter Smith to Massachusetts in 1870. It is, therefore, germane to the purpose of this Report, although not solely artistic in its present development.

This second volume of the Report was prepared for the press and designed to be issued simultaneously with Part I, but it was found to be impracticable to so issue it, because, owing to the smallness of force in the Bureau of Education, the requisite proof-reading could not then be done.

This volume, had it then appeared, would not have included any account of work in the public schools, as that phase of the subject was fully given in Part I. While no attempt will be made to continue the history of the progress in the introduction of drawing in the public schools, begun in the previous volume, it has, nevertheless, seemed proper to give in an appendix such materials as show the most recent phases of that movement. The programmes of the courses of drawing now used in the Massachusetts Normal Art School, and other public schools of the State, as arranged by Mr. Charles M. Carter, State agent of the Massachusetts Board of Education, are so given.

THE PLAN OF THE CHAPTERS ON INDUSTRIAL EDUCATION.

For the reasons suggested, some accounts of the contemporary movements for the introduction in public schools of industrial training, not necessarily artistic, will be given in the following chapters.

As this is a new departure in educational methods, it has seemed desirable to show the growth and changes of opinions; for the movement is necessarily based upon the perception, by the educators and the public, of the desirableness of some changes in methods; while the nature, extent, and manner of the changes are all in question and proper subjects of discussion. So that it seems desirable that the various steps by which conclusions have been arrived at in such communities as have taken some decided action, should be given at length for the information of others contemplating action in similar directions. For this reason public official reports, as well as direct communications made to this Bureau, are freely quoted at length in the Appendices. It is hoped that sufficient material for tracing historically the inception and progress of this important educational movement in the United States, will there be found; as well as an adequate showing of the arguments used by both parties to the discussion. Fulness and accuracy, rather than brevity, have been sought in the compilation from the various authorities there given.

It has been said, by one experienced in observing the results of legislation, that the unforeseen, indirect, and far-reaching influence of any law was much greater, and often far other, than the intentional results sought by its enactment. Perhaps the recent "Interstate Commerce" law may be instanced as in point. However this may be as applied to man's enactments, it is unquestionably true in relation to the results of his discoveries in the realms of nature when he has once set his new-found servitors to work! Who, for instance, could have foreseen that Galvani, experimenting with the legs of frogs in his laboratory in Italy; Watt, dreamily watching the teakettle by the cottage hearth in England; Franklin, kite-flying in the Philadelphia fields; Fulton, whittling out the model of the strange, sailless craft he was to launch on the Hudson; or Morse, stringing wires around the walls of his studio in New York, were, each and all of them, busy with that which would affect for ages all the after development of civilization; and influence the lives of men and the destinies of nations, to a far greater extent than did the decisive defeat and victory of Waterloo? Yet the discovery and utilization of the powers of steam and of electricity have not only revolutionized the world of matter, but of ideas!

ADVENT OF THE INDUSTRIAL ERA.

The era of Industrial Democracy was made possible by these modest, patient students of nature. As soon as the advance in material development due to their discoveries began to be realized, the male inhabitants either of kingdoms or republics, who had hitherto been regarded only as possible soldiers, began to be respected as producers—active factors in the production of the resources of wealth and power of the country. The new contests between countries gradually became contests between the art, skill, and industry of their respective peoples. Not that wars have ceased, or that arms are laid aside, but that the arts of industry, the avocations of peace, begin to be recognized as legitimate fields in which the interests of nations are to be contested. The Rulers are alert to impress all discoveries in the arts into the service of war, and are prompt in utilizing all inventions in the industries for warlike preparations. Nevertheless, it grows more and more apparent that the skilled artisan is rising in the scale of importance, while the warrior is valued more and more because he may be the protector of the workman, and of the precious things his art has produced. The World's Fairs are recognized as the arenas in which the most brilliant triumphs of nations are to be won. The moment that it was seen that commercial supremacy was based upon industrial superiority, the new era was inaugurated. This was first clearly seen at the first great "World's Fair" which was held in Hyde Park in 1851. National efforts to promote technical industrial education on a large scale date from that event. The rise of the Mediæval Renaissance does not more clearly date from the discovery of the classic manuscripts than does this modern era of the European renaissance of artistic industries from this great fair. The traditions of Art Industries had, it is true, never been wholly lost in France, but the beginning of that general movement, which embraces all the European States, which led Russia to re-create Byzantine Art, and England to discover new Regions of Art, and which has begun to be felt even in these United States, can be definitely traced to that time of the uplifting of the strange, gleaming, crystal dome above the elms of the London park.

THE INTRODUCTION OF DRAWING IN AMERICAN SCHOOLS.

The beginning of the modern art educational movement in the United States can be as definitely assigned to the year 1870.

By a melancholy coincidence which groups the termination of the lives of the three remarkable men by whom this great educational reformation was begun, within a few short months of each other, the close of the first period of this movement, destined to exert immeasurable influence over the future of America, can be fixed as in 1886.

In common with Dr. Philbrick and Mr. Perkins, Professor Smith regarded the introduction of industrial art drawing in the schools as but the beginning of the movement for the industrial art education of the American people, as his published addresses testify.

The great movement in the United States which these three men definitely organized, and of the development of which they had a far-sighted, comprehensive view, may be said to have already fairly entered upon the second period of its development, no longer by any means confined to the public schools.

THE RELATION OF DRAWING TO THE PRESENT MOVEMENT.

It is because all training in industrial education that can be given in the public schools as they now exist, or in any new class of schools that may be established with that direct purpose, must, of necessity, be based on the thorough grounding of the pupils in the knowledge and practice of elementary industrial art drawing of like character with that first successfully taught in the public schools of Massachusetts under the directorship of Professor Walter Smith, that the present widespread movement is termed a second step in the new educational Advance.

The attempts to introduce the new study of drawing met with every phase of opposition, and it was not till the experiment had won assured success in Boston, and in neighboring towns, that the difficulties attending its general introduction in the public schools of the State began to diminish. However, at the same time there were, in some cities and towns in other States, wide-awake educators who realized at once the value of the new method and made haste to adopt it; so that the movement was soon practically begun in several centres in different parts of the country, notably in Portland, Me., in Syracuse, N. Y., in Milwaukee, and in St. Louis.

What these three men in Massachusetts did, was to demonstrate, beyond cavil, that it is as possible in the same time to teach a subject, by means of drawings and objects shown and explained by a teacher to a class, to many pupils simultaneously, as it is to teach the same thing to a single pupil. The effect of this discovery was at once to multiply indefinitely the power and capacity of the public school. For not only was this true of instruction in drawing and in writing, the studies which before had been thought to need the particular devotion of the teacher to the individual pupil, but it was found applicable to many other studies and to afford great facilities to teachers in illustrating many topics.

If industrial art drawing had no other value than to have furnished this proof of the facility of general instruction to classes, instead of to individual pupils; it would have fully justified all the cost of its introduction in the schools, in money, time, and effort. Much besides this was effected by the proof that the study of industrial art drawing demanded no special faculty on the part of either pupil or teacher, but could be taught to all by the regular teachers of the schools, after a little preliminary training of the teachers themselves in classes. It was long before the popular impression that drawing merely meant picture-making, and that the ability to draw was a special gift of genius, could be corrected; but this was gradually effected by repeated public exhibitions of the work done by all the pupils of a school, or of all the schools of a town or city, where it was shown that every child whose eyes and fingers were uninjured could learn to draw. The object of the study, which was to train the eye and the hand—the one to accuracy of seeing, the other to facility of execution and exactness of statement—began slowly to be understood.

The value of a thorough training in industrial art drawing has at last become so generally recognized as to call for little argument. It is taken for granted in the discussions about the further development of industrial education that the pupils have been taught the elements of drawing; just as, in discussions about new text-books, their ability to read is assumed. It was far otherwise in the beginning. All through the early years of the decade from 1870 to 1880 there were very few individuals, and fewer school officials, in cities and towns, who were in the least aware of the usefulness of this study. The very places in which the most zealous advocacy for manual training in schools and for the adoption of all forms of industrial education is now found were only, after long-continued efforts, led to allow the experiment of teaching drawing in their public schools to be tried. However, the Centennial Exhibition in Philadelphia in 1876 worked wonders in the general diffusion of a knowledge of the possible value of this industrial art education; for the American people then first saw into how large a share of the manufactures and arts of mankind this application of art to material enters; first learned how values were enhanced by art, and began to realize how art ennobles labor.

They saw also, at Philadelphia, in the collections shown there of the industrial art drawings made by the school children of Massachusetts, by what methods, and with what results, the teaching of this new study could be effected. More than this, the pupils' work in applied mechanics, shown by the Russian schools, illustrating the results of giving definite instruction, in a systematic course, to artisans, was there first seen, and the idea of the "Manual Training School," since so admirably exemplified in the St. Louis and the Boston schools, modelled after the Russian plan, was familiarized to American educators; thus, the sure foundation for a further advance in the development of industrial education was laid.

As soon as the success of this attempt to begin the elementary training of the eye and hand in the public schools was satisfactorily established, it was evident that a new and valuable means of education had come into use. Educators eagerly adopted and experimented with the new methods, some looking at them only with a view to their application in the art of teaching, their pedagogic value; others, the majority, seeing in them the means of giving a more directly practical turn to the training in the public schools. The demand for this more practical education has been rapidly growing, and in these new studies were found the first practical suggestions for so modifying the old methods of school education as to adapt them to the new demands. In common with all germinal ideas they were found capable of various applications and of indefinite development. It was the recognition of this potentiality that led Dr. Philbrick and Mr. Perkins to desire and secure their introduction.

When it is seen how truly the present interest in industrial training is the legitimate result of the introduction of industrial art drawing in the public schools of Massachusetts, and that, but for this pioneer work in thus clearing the way and laying the sure beginnings of general technical training in this country, the great Philadelphia Exhibition must have failed of any direct practical bearing upon our education, or our industries, other than to greatly stimulate the buying of foreign art manufactures; the magnitude of the services rendered to the whole country by the three men who originated the plan, and effected the introduction of the practical study of industrial art drawing in the common schools of Massachusetts, in 1870, begins to assume larger and grander proportions.

That the practical value to the people of the United States of the opportunities afforded by the splendid displays of their art industries by the nations of the world at Philadelphia was greatly enhanced owing to the direct interest in industrial art training, begun in Boston six years before and rapidly developing in Cincinnati, St. Louis, and elsewhere, may safely be assumed; because the industrial value to a people of the sight of such varied museum collections as were shown at the Centennial, is not mainly derived from the pleasure given to the mere sightseer, but is owing to the opportunities thus afforded to practical designers and artificers for thorough study of the works shown; for, as Emerson sagely says, "No matter how much facility of idle seeing a man has, the step from knowing to doing is rarely taken." It was in this Exhibition, that the utility of such training in the artistic industries was first made known to large numbers of Americans; it was here, also, that the methods of successful teaching in the elements of these arts were first shown to the whole country. It is of interest thus to be able, sometimes, as in this instance, to trace great results to their causes.

This movement was the true dawn of the new era of the industrial art development of America, which was apparently ushered in by the Centennial Exhibition; nor, if the movement which has gone steadily forward from those early days in Boston meets with no unforeseen interruption, will the term "era" seem inappropriate.

CHAPTER V.

CHARACTERISTICS OF THE NEW DEPARTURE.

The awakening of interest in Technical Education due to the modern development of Science—The new era only made possible by the changed relations between pupil and teacher—The pupil transformed from a passive recipient to an active searcher after knowledge—Agassiz in Cambridge and Newell in Baltimore pioneers in this revolution—The Japanese method of learning to draw from natural objects—The laboratory system essentially the same in the university and the kindergarten—The identity of action of the laws of nature recognized—"Alternation of employment" the key-note of these new educational methods—President Walker's talk to the Boston School Committee about Arithmetic—The lesson Mr. Leland learned while watching Cairene children making trinkets—Some suggestions concerning school exhibitions of articles made by American school children.

THE NEW EDUCATIONAL MOVEMENT THE CHILD OF SCIENCE.

The widespread interest in the subject of industrial education, which has apparently so suddenly sprung up all over the United States, furnishes a striking instance of the manner in which a new movement, long in unnoted preparation, sometimes displays surprising extent and power. The increased space and consideration given by all public journals, during the past three years, to the class of subjects bearing upon the relations of education to the industries of the country, furnish a sure indication of the extent of popular interest. These relations are as varied as are the several institutions of learning and the different industries and arts.

The causes which have led to this interest in technical education throughout the world had their inception in the wonderful development of Science, which first began to be a recognized factor in human life some fifty years ago, and which, moving with ever-accelerating impulse, has, by means of continuous discoveries and inventions, revolutionized the world's industries and ameliorated the conditions of living in a thousand ways, often almost unnoted. How speedily the new conveniences banish even the memory of the old makeshifts, is wittily shown in the story told by Hans Christian Andersen, called "The Magic Goloshes," by putting on which the wearer, who had been praising the former times and railing against modern ways, found himself, on stepping out of the warm, well-lighted house of his friend at midnight, in the filthy, dimly-lighted streets of Stockholm as they had been a century before, in the good old times he was praising, and speedily recanted his heresies. It is a story whose virtue "lies in its application," and should be read to all grumblers who persist in disparaging the leaden Present in contrast with a fancied golden Past.

SCIENTIFIC METHODS ADOPTED.

The new era in education was only made possible when educators began to set the pupil to investigating and proving a subject for himself, instead of contenting themselves with lecturing to him about it.

When Agassiz, in Cambridge, first set his young naturalists to find out for themselves the peculiarities of the specimens before them, and Newell, in Baltimore, some thirty years ago, set his pupils in natural philosophy and in chemistry to making the experiments themselves instead of listlessly looking on while the teacher experimented—when, in other words, the pupils of these two great teachers were thus transformed into being themselves active seekers after knowledge, instead of remaining simply passive recipients of *ex cathedra* statements, which had before been thought to be the normal attitude of the pupil mind—the new era was, for them, already begun.

During a conversation recently with a distinguished educator the opinion was by him expressed that the new movement in education really began with the introduction of Colburn's Mental Arithmetic, by which the pupil was called on to reflect upon and then explain the processes by which his conclusions were reached.

The plan of Agassiz in putting a fish, crab, or other natural specimen before the new pupil, and setting him to study and describe it, resulting generally in surprising the student by letting him find out how little in amount and how incorrectly in fact his untrained eye could see in the object before him, when compared with what, under the master's training, he eventually found was there to be seen, is exactly the Japanese method of art training, as described. There the pupil is set, without pencil or paper or any drawing material, to study the bird, or object selected, nor is he permitted to attempt to draw it till he is certain that he knows it—a process to which sometimes days are given.

This, then, explains the wonderful effects of life and movement produced by a few simple strokes of the brush or pen in the hands of the artists of Japan.

THE MODERN LABORATORY PLAN OF STUDY.

The laboratory system, by which scientific studies are now pursued in all the best universities and schools of technology is, in its essential methods, one with the new methods already begun and proposed in the public schools. Remote as may at first sight seem any possible relations between the methods of the Kindergartners and those followed by youthful investigators in the physical laboratories of Yale, Harvard, or Johns Hopkins, they are, nevertheless, based on the same principles. A careful analysis of the methods of instruction in industrial drawing, of the modifications and developments of this study during the past three years, and of the methods of instruction adopted in the new manual training schools will show that they are all, both in theory and practice, based on the same general truth which is the basis not only of the investigations of nature undertaken by all modern scientists, but as well of all methodical training in the technology of the arts and sciences.

Increased knowledge, to-day, of psychology and of physiology ought to render impossible repetitions of some of the mistakes of earlier educators, since the laws of the development of mind and body are better understood. The identity of action of natural laws, under whatever disguises of differing phenomena or seeming antagonistic conditions they may assume throughout the vast realms of nature, begins to be recognized.

So much food, so much force: is a law which applies equally to the steam engine and to the human being. This force can be exerted for a shorter time with greater intensity; or with less power for a longer time. It is the same force; whether the physical system applies it to the movement of the muscles, or, whether the intellect exhausts it by mental efforts. The wise man will husband this power; carefully adjusting the amount and form of its expenditure to the ends he seeks to accomplish. It was ignorance of the truth that brain work exhausted the bodily forces just as brawn work did, only with greater rapidity, that largely led to the failure of the manual labor schools which were in vogue fifty years ago. At these schools, the students, by working in the fields, or at mechanic trades, were expected to pay the cost of their own living and of their tuition, at the same time that they pursued their studies. The strain thus put upon the physical system was too great, the drafts drawn against each man's store of force too large, to be long sustained. The experiment was short lived. It should be remembered, however, that objections against the present manual training schools, based on the conspicuous failure of these old-time manual labor schools, are of no validity; because the organizers of the new schools have carefully avoided the errors that made the failure of the former inevitable.

In like manner the Kindergartners, acting under the guidance of Fröbel, who studied the nature, habits, and capacities of the child, with the same patient observation and intentness which Agassiz taught his pupils to apply to the study of natural objects, obey the indications of nature. In developing the child's faculties and powers, they rely "on the same principle that made the strength of Newton, alternation of employment."

"ALTERNATION OF EMPLOYMENT" THE MOTTO OF THE NEW EDUCATION.

The advocates of the Manual Training Schools rely on the same principle. Not pushing physical training to any such excess as would be inevitable if the support of the pupil by his own labor was involved, they believe the transition from moderate brain work to moderate physical work, to be restful rather than fatiguing. All educators who are intelligent advocates of the new era in education, act always in accordance with the plan so well illustrated by what Emerson characterizes as "one of the high anecdotes of the world, the reply of Newton to the inquiry how he had been able to achieve his discoveries: *By always interesting my mind!*"

There, was spoken the great secret of all progress in the acquisition of knowledge;—the Mind alert, intent on its pursuit. Therein, too, lies the peculiar art and power of the Teacher, whether of children or men: the power to interest the minds of those to be taught; to intensify the force applied. On the due observance of these two laws, alternation of employment and intensity of mental application, all success in education depends.

By insisting on accuracy of observation and statement, by presenting subjects in simplest forms and methodically arranged, always in logical sequence, and by such repetition of the first steps as may be requisite to secure that no step shall be taken till the previous one is mastered, so that whatever the pupil learns shall be thoroughly learned, whatever he does shall be thoroughly done, both the mental habits and the mechanical facility, which are the objects and sure results of good training, will be secured.

These methods are equally applicable to all forms of education, and to all pupils alike, whether in Kindergartens or Universities.

SCIENTIFIC METHODS OF TEACHING WILL SECURE TIME FOR THE NEW STUDIES.

By obedience to these laws; thereby securing alternation of employment before interest or force is lessened, and intensity of mental application, due to the alert attention of the pupil; and by such methodical presentations of subjects with needful iteration, as has just been suggested; much time in the elementary schools now wasted, or worse than wasted on bad methods or useless studies, can be economized and given to the proposed new studies. To add a column of figures rapidly and accurately, to make no mistakes in simple sums of addition, subtraction, multiplication, and division, the kind of arithmetical knowledge needed in every-day life, is, as President Walker has shown in his recent admirable talk to the school committee of Boston, of far more value to the vast majority of school children, than can possibly be a knowledge of the intricacies of fractions or facility in the gymnastics of the puzzle problems of the text-books, without such ready accuracy in every-day sums. This statement by President Walker well illustrates the rational demand for a more practical education in the public schools. There *is* a demand for a so-called "practical" education which is decidedly irrational.

In every new movement in which public interest is largely aroused there is apt to be much purposeless activity and misdirected zeal, which, in the end, is sure to react most unfavorably against the movement, however desirable its purpose may have been. The new educational movement can hardly hope to wholly escape these dangers. The widespread interest in the training given to the rising generation cannot fail of good results if it only awakens intelligent investigation and reflection on the part of some of those whose attention is thereby aroused to a grave danger and a pressing need.

In Mr. Leland's classes in Philadelphia an interesting experiment has been tried. The suggestion came to him on seeing, in Cairo, little Arab children making trinkets for sale. Since these little Arabs are so skilful, he thought, why cannot all children be readily taught to make similar artistic things if good models are given them, so that, without further training, they may become profitable workers in what he terms the Minor Arts? Opening classes, which, at certain times, public school children were allowed by the authorities to attend, he reached some very interesting results showing the readiness with which young children could thus acquire a certain amount of manipulative skill. Since Mr. Leland's departure for England, these classes have been organized into a school, called the "Industrial School," by the Philadelphia School Board as one of the city public schools.

MODERN EXHIBITIONS OF THE INDUSTRIES OF SCHOOL CHILDREN.

The rise of numerous associations for stimulating the exhibition of work by school children is, perhaps, due to the fact that a knowledge of Mr. Leland's experiments was widely disseminated through the distribution of his "Circular" by the U. S. Bureau of Education. There have been many local exhibitions of scholars' work, which have culminated in the remarkable displays, the contributions of various towns and cities, made in New York under the auspices of the "Industrial Education Association." This association was organized in 1884 with the direct purpose of promoting the cause of "Manual and Industrial" training, and, if wisely directed, can exert an immense influence for good, both directly in the city of New York and as a great centre of information and influence. So far as it conduces to the adoption of thorough methods of practical training in industries, a work upon which it seems to have actively entered, it has a field for untold usefulness. So far, however, as the movements throughout the country rest content with merely stimulating the school children to make things, in or out of school hours merely for exhibition; so far, educationally, they can lay claim to nothing better than the work in Berlin wool, tidies, and patchwork, shown by our grandmothers at "cattle shows" and church fairs, evidences often of misdirected energy and worse than wasted time. Only as this movement may lead to the introduction in the schools of regular methodical instruction in the elements of manual and industrial training, can it be expected to be of any permanent educational value to the country—rather indeed of harm, if such profitless activity is substituted for true educational methods, as may very possibly happen. If the "Manual Training' people are right in emphasizing the fact that their purpose is not the production of things by a boy, but the product of a skilled boy, then to merely incite the younger school children to make things to be shown, is not a very high aim; or one likely to prove of much permanent value educationally. If, however, these enthusiastic efforts in various communities, instead of being thought to be a satisfactory solution of the problem, are made use of to stimulate discussion and to induce a general study of this novel question of industrial education in public schools, they may prove to have been of great value.

CHAPTER VI.

EDUCATIONAL PROBLEMS.

Kindergarten and Manual Training Schools—The scientific method of teaching, common to the new schools; though the one is designed as the lowest elementary, the other as the highest advanced school in the public school system—Value of the new scientific method—Equally adapted to all grades of schools—Defects in public school courses as long since pointed out by State Superintendent Newell of Maryland—Industrial Art Drawing first introduced in Boston, by Superintendent Philbrick and Mr. Charles C. Perkins, in order to remedy these defects—Educational, as well as practical value of this study—Exhibition of pupils' drawings at Madison, Wis., in 1884—Public Kindergarten and Manual Training Schools, a logical sequence to the introduction of Drawing—The readjustment of vocations, and of educational methods, made imperative by man's increasing mastery over the forces of Nature—To make this master of Nature master of himself the true mission of education—The rapidly growing recognition of the right of all to public free education, a marked characteristic of the present day.

THE TWO NEW FORMS OF SCHOOLS PROPOSED.

Two new features in the public schools which are distinctively characteristic of the present era are found at the two extremes of school life, the beginning and the end; both, as has been the case with all similar innovations in American schools, originated with private citizens. While neither, so far as their general adoption in public school systems is concerned, can be held as yet to have passed beyond the experimental stage, they are both evidently growing in favor and begin to be adopted. These are the Kindergarten and the Manual Training School—the Kindergarten designed for the very youngest children and the Manual Training School for boys of the high school age.

The kindergarten methods are too familiar to need recital here. It was long thought their cost and character would render impossible their adoption in public school systems; but Professor Harris, when superintendent of the city schools, boldly adopted them, in St. Louis, some years since, where they still prosper, and Superintendent Seaver, of Boston, says, basing his opinion on his observation of the private ones supported by Mrs. Shaw, "they ought to be recognized and established as part of the system of public instruction in this city." President Walker, while recognizing that, for American children, the German methods need modification, says: "For the younger children the blessed Kindergarten has come; * * * has come to stay." He further observes that although these schools have not yet been adopted as a part of the public school system, their methods of instruction have already sensibly modified the modes of teaching in the lower grades of the public primary schools. The latest report of the city school superintendent of St. Louis, giving a total of 6,506 children enrolled in the public Kindergartens, shows the continued prosperity of this class of schools, and that transition from them to the lowest grades of primary schools is to be made easier by the introduction of modelling in those grades. Heretofore there has been a break between the Kindergarten and the lowest "primary," owing to difference in methods of instruction; just as, at the other end of the course, the boy who went from the grammar school to learn a trade as an apprentice, found an absolute break!

These two new kinds of schools are, as already stated, each based on scientific methods of teaching, the introduction of which began, and the rapid dissemination of which characterizes, the new era in education. When the methods of teaching in the intermediate schools are, in like manner, brought to harmonize with the orderly progression of the child's development, as indicated by nature and formulated by science, then not only will the system of public school training be the best for the child who pursues it through all its grades, but also for the child who leaves school at any stage in the course; because to know a little thoroughly, and to have been trained methodically, is a far better preparation for any further acquisition of knowledge than to have a smattering of many more things. In other words, thoroughness is better than superficiality, whether one is to study books, or things, or men. Therefore, to teach the child in each year of his growing life the things that belong to that period is to give him the best possible preparation for the coming years.

Long ago, as already stated, Professor Newell, State superintendent of Maryland, publicly called attention to a serious defect in the organization and courses of the public schools, by showing conclusively that the several courses of studies were arranged with a view to giving the pupil the best preparation possible for advancing in regular succession through the higher grades, but with no adequate provision for the best preparation of those who were forced to end their school days before completing the entire course.

Certainly, in view of the fact that by far the larger number of children in attendance on the public schools remain in school only five or six years, while only a very small per cent., put by some authorities as low as 4 per cent., remain to pass through the final highest grades, this is a grave fault.

Some modern school reformers would add that the system was consistent throughout, for not only did the lower schools fail to fit their scholars for the outside world, but the graduates of the highest schools were no better fitted for the most of the duties of practical life! This, indeed, is the gravamen of all the serious charges against the public schools.

DRAWING THE COMMON BOND BETWEEN ALL THE SCHOOLS.

It was to begin a remedy for this that Superintendent Philbrick and Mr. Perkins effected the introduction of drawing. This study of industrial art drawing, when taught in accordance with true pedagogic methods, forms the common chain which links all the schools, from the Kindergarten to the Manual Training High School, in orderly unison. The teaching value of this study, both in itself and in the illustrative facilities it affords to instructors of other subjects, is being slowly appreciated and developed; while the practical value of the study when so taught as to develop symmetrically the powers of observation and the constructive faculties of the pupil, is very generally acknowledged.

This was most convincingly set forth at the great annual meeting of the National Teachers' Association, held in Madison, Wis., in 1884, where specimens of drawings by public school pupils were shown from schools representing twenty-four States of this Union. These drawings when arranged for exhibition covered a wall space of 1,000 feet in length by 8 feet in height, and while there were still to be found a sufficient number of examples of the old-time picture-making by tyros, which leads nowhere, to give increased value to the new scientific methods of instruction by contrast with those obsolete, useless efforts, the great majority of the drawings showed that the subject was logically taught, while the admirable arrangement of many of the exhibitions, showing their courses in free hand, construction, and design, facilitated comparison between the several schools whose work was shown, and were in themselves object lessons showing the possibilities of this study for developing orderly, logical methods. By contrast, the lack of such orderly arrangement in some of the collections gave proof that the teacher in charge of the particular display had missed one of the most valuable educational phases of this study. At the meeting of this Association in Chicago, in July, 1887, a much larger exhibition of scholars' work in drawing, than was collected at Madison, was shown by "The Art Department;" in which a remarkable increase in the number and quality of "working drawings" showed the increased attention now given to "construction," and thus offered additional illustration of the practical tendencies of all school work at the present time.

The writer regrets that he was not permitted to attend this meeting of the Association; at which so excellent an opportunity was offered for the comparative study of the methods of teaching drawing now in use by the schools of the whole country. To have studied this exhibition, while engaged in the preparation of the present volume, would have been of the greatest service. It is hoped, however, that a detailed account of this exhibition of scholars' work in drawing may be secured for the appendix. There were two features in this exhibition, of especial interest as examples of the divergent ends which are equally served by the teaching of elementary drawing in the common schools. These were, the exhibition of the work in drawing done in the "Rose Polytechnic Institute,," the admirable Technological Institution at Terre Haute, Ind., presided over by President Mendenhall, and a collection of the drawings by the pupils of the Chicago "Art Institute," of which Mr. W. M. R. French, the well known Art Lecturer and teacher, is Director.

These furnished admirable "Object Lessons" of the double relations borne by elementary drawing in public schools, to our modern civilization.

In the development of the Kindergarten as part of the public school systems, and in the like adoption of the new Manual Training Schools, is to be found the "step in advance," in that movement which began when "Industrial Art Drawing" was first introduced into the public schools of Massachusetts.

NEED OF READJUSTMENT TO NEW CONDITIONS.

In the very general interest shown, and in the movements undertaken for promoting various forms of industrial training, in and out of the public schools, which have been a marked feature all over the United States during the three years past, there are sure indications that there exists some serious disturbance of the equilibrium of the body politic. Some suggestions in this connection are here offered simply as contributions towards the consideration and discussion of subjects in which the people of America have a very vital interest.

In the first place, it is wholly unfair to charge the public schools with any responsibility for the existence of conditions of society which they could have had no part in creating; yet this is the precise accusation made by most critics.

The mastery obtained by man over some of the primal forces of Nature, begun some fifty years ago, has revolutionized ideas, institutions, and methods with a rapidity so startling as to bewilder thought. To effect the re-adjustment of the relations of the individual man, of classes of men, of society as a whole, and of countries, to these utterly unforeseen conditions, is the difficult problem set to this generation. To anticipate the changes of the immediate future, which a single discovery, invention, or appliance may at any moment bring about, is impossible; yet this is the problem set the educator. He is to so plan his scheme of instruction as to best fit the pupil for living in the conditions in which he will be placed ten or twenty years later! Does not this suggest a return to elementary principles? Is the wise educator not forced to give his attention to such methods as will most fully develop and train the whole man? Is it not his duty to "put the whole boy to school"? to borrow Professor Woodward's happy phrase.

When a single discovery in chemistry, a new application of photography, a novel use of electricity is liable to change at once the methods in vogue in a whole group of industries; to render obsolete costly machinery and painfully acquired skill; all who take interest in the kind of education to be given in the common schools of America may well demand that such training shall be given the youth of the rising generation, as will best enable them to meet the ever-shifting conditions which must inevitably result from the new discoveries, which now seem always impending. To teach a trade which the next invention may destroy, to train a pupil in the technical skill of a particular industry of which the next discovery may make an end, seems plainly a useless waste of time!

THOUGH INVENTIONS MULTIPLY THE LAW OF MENTAL DEVELOPMENT CHANGES NOT.

Arts may fade, industries change, but the man remains! The laws governing the development of the human intellect do not change. The mind still takes cognizance of facts through the medium of the senses. That education, which will give this human being command of himself, of all his varied powers, is that, which will best enable him to cope successfully with whatever difficulties or dangers may threaten him. To make the man master of himself, has ever been the purpose of true education; but in the past it has always been a class or an individual that was alone considered in any scheme of education.

The idea that every human being has a just claim upon the community to be given an opportunity for getting such an education, is essentially modern. It has been of slow growth and is yet very far from meeting with general assent, even in this Republic; yet, it is the inevitable corollary of the propositions announcing the inalienable birthrights of man, as set forth in the famous "Preamble," to the Declaration of Independence. It is essentially an American idea, and is very difficult of denial in a Republic in which universal manhood suffrage prevails. It is a significant fact that the communities which have, in their educational provisions, more closely approached this ideal, are known as the most enterprising and the most prosperous. The necessity for universal education goes hand in hand with the exercise of universal suffrage. Like the Siamese Twins, these two, cannot survive separation.

However the nations of Europe may differ in their ideas of government; they *all* show increasing interest in the education of the people.

A wide-pervading, earnest effort to discover how this problem of education can best be solved for All; how the best possible training can best be secured to All; distinguishes the educational movements of the present day all over the civilized world. It is in recognition of this universal awakening to the needs of the universal education of the people, that I have called our own day a new era in education.

The introduction in the British Parliament (1887) of "A Bill providing for Elementary Technical Instruction" is a striking indication of this trend of public sentiment. That the English people were aroused to the importance of superior technical instruction was shown by the fact of the appointment of the Royal Commissioners, whose investigations are recorded in the five volumes of their recent admirable and exhaustive report. This bill seems to intend something similar to the present American movement for introducing industrial training in the public schools of all grades. It is true the bill was laid aside, owing to the immediate pressure of political measures, but its introduction was significant; much interest was shown in the debate, and it will doubtless be reintroduced at a more favorable time. Mr. Mundella, in supporting the bill, illustrated the efficacy of this instruction as follows: "He was ashamed to confess that we were going to attempt nothing like the higher technical schools of Germany, or even what the poor Swiss were doing. Technical instruction had made the Swiss, from being a mere peasant nation, without harbours, mines, or any industrial resources, into an industrial race."

The recently reported statement by Walter Besant, whose pen proves like Aladdin's lamp in palace-building power, "that he hoped next year to see thirty thousand youth receiving technical industrial training in the halls of the People's Palace,"—that wonderful East of London building so royally opened by the Queen in state, in this her year of jubilee,—is also a sign of the times.

In these last decades of the Nineteenth Century palaces begin to be built for the people, and "the Education of the People" has become the watchword of the World.

CHAPTER VII.

INDUSTRIAL EDUCATION—PRELIMINARY SUGGESTIONS.

Importance of accuracy, and agreement in the use of terms—President Walker's address on "Industrial Education" referred to, as quoted in Part I, for clearness of statement—Value of Industrial Art Drawing as a public school study generally conceded—The new discussion recalls the ever present problems of How far shall the Public go in giving free education and what forms of practical training are feasible?—Accounts of actual experiments in public school industrial education, to be given in later chapters—So called "Mechanical" labor and "Mental" labor differ only in degree of mental application—All training is, of necessity, training of the mind—The new questions then resolve themselves practically into the *direction* to be given to mental training in public schools—The attitude of the "Labor Unions" considered—The free public schools the only means of education accessible to all; to the children of emigrants as well as all others—A fact to be kept in mind by foreign-born workmen, who have secured American homes—Successful experiments in training the children of wild Indians to industrial pursuits—Lessons to be learned from this success—Importance of industrial training for girls—The public school of to-day the only substitute for the home training of the Past—Industrial training of girls and boys equally necessary.

NEED OF CLEAR DEFINITIONS.

It is very evident in reading the early discussions concerning "Industrial Education," "Manual Training," "Technical Instruction," etc., that often the contestants are unconsciously treating wholly different topics and arguing from widely separated premises. In no other way can their opposing statements be reconciled; or can the apparent opposition of some, to the identical plans which in other cases they have warmly approved, be explained.

It was because of this confusion that it was thought expedient to insert the admirable address by President Walker on "Industrial Education" as Appendix G in Part I, rather than to retain it for later publication in the present volume, with which it is more directly allied.

To all interested in these topics the clear statements of the president of the Massachusetts Institute of Technology can hardly be too urgently commended. The main divisions of the subject are clearly outlined, while the necessity of elementary instruction in industrial drawing in all public schools as the essential basis of all industrial training is emphatically stated.

It is an encouraging feature of this movement for a more practical element in the training given in the public schools, that its advocates are agreed that a knowledge of industrial art drawing must precede, and accompany, all efforts to impart mechanical skill. So much has been accomplished, and, indeed, it is only because the experiment of teaching drawing by the ordinary teachers of the public schools to their scholars in classes has been proved an unquestionable success, that the plan of introducing still further industrial training has been seriously considered; so that, before Part II of this Report has issued from the press, the great purpose for which the Report was undertaken and to which Part I was given, has been fully justified.

That instruction in the elements of industrial art drawing in all public schools can be readily effected, and, further, that it is desirable that it should be so introduced in all the schools of the country, has been demonstrated beyond a reasonable cavil. Discussion on those points is no longer needed; the proofs are abundant and convincing, needing only to be known.

The questions now under consideration both by educators and the public, and in which many communities are profoundly interested, relate to the further applications of the methods with which this instruction in drawing has familiarized the public, and bear directly upon the questions of how far the public should go in giving free preparation for the duties of practical life to any, and what forms of such training can be provided for all. It will be seen that two very different problems are here involved, which, if blent together in discussion, must inevitably lead to confusion.

In a later chapter, an account of the Baltimore experiment of providing for such public school pupils as desire them, facilities for fitting themselves for the mechanical trades, similar to those which have long been provided for such pupils as have wished to prepare themselves for college, with a view to subsequent entrance in any of the so-called learned professions; is given in detail. References to this notable movement, and to the early beginnings of the experiment in Philadelphia by Mr. Leland, were made in the previous chapter, because these steps were taken before this volume was first made ready for the press.

Accounts of the several efforts towards introducing some forms of industrial training in the public schools, in different cities and towns, are given in succeeding chapters with the fulness requisite to show the progressive growth of opinion in each case so far as the material accessible permits. In the instance of the city of Philadelphia, the preceding and subsequent relations of the city authorities to Mr. Leland's school incidentally appear.

Before entering upon these details it may be well to consider for a moment what is meant by the term "industrial" as applied to education, and, further, whether the distinctions implied by the use of qualifying terms descriptive of classes of education are not misleading and pernicious.

In what consists the difference between the workers of mankind that shall justify any such divisions as the self-elected champions of the so-called "laboring classes" erect into a shibboleth?

THE MIND THE RULER AND DIRECTOR OF THE MUSCLES.

So long as the muscles are obedient only to the will power of the brain, which organ must direct the simplest action of the eye or hand, any designed movement of the muscles implies the previous intelligence of the brain; so that, in order to teach the human being to perform the most elementary mechanical action, intelligent comprehension by the mind of the purpose intended by the desired action, must first be obtained.

The existence of so-called automatic action of the muscles, resulting from frequent repetition of certain movements, in no wise invalidates this proposition; but, really in itself, furnishes an additional argument for making the development of the intellect the basis of industrial training; because, since the apparently involuntary action of the muscles independently of any conscious direction by the mind, supervenes upon long continuance in a series of similar actions, it is of all the more importance that the actions which are to be frequently repeated should, in their inception, be intelligently directed. The additional ease with which both mind and muscle travel in beaten tracks, is at once an encouragement to the beginner in the acquisition of the theory and practice of any new science or art, and also a warning; for, since by repetition any action becomes habitual, and habit is second nature, it is of prime importance that thought and action be started in the right direction; therefore, to beginners, the wisest guidance should be given; since the formation of right habits of thought and work is far easier than the correction of wrong methods that, by repetition, have become habitual.

THE INDUSTRIAL VALUE OF COMMON SCHOOL EDUCATION IN THE PAST.

The necessity and value of a comprehension of this direct relation of the mind to action in directing the most rudimentary forms of labor, as well as an exposition of the economic value of such methodic training in its application to the simplest industries, such as the use of the shovel and the hoe, was long since so well and so exhaustively set forth by the late Dr. Edward Jarvis, in one of the earlier publications of this Bureau,* as to render superfluous any further attempt at demonstration. In view of that exposition the statement of the fact that the elementary education given to the child in the primary schools is of positive economic value in increasing the usefulness and consequently the pay of that child when it becomes a worker, must be accepted as an axiom. A little reflection as to the logical inference to be drawn from such an admission will show that it must follow that, whatever the form of the child's education by which the intellect is developed and trained so that the mind is better able to think and discriminate between cause and effect, the one great point to be secured in the earlier steps of the child's training at school is this development of the intellect: so that, no matter how plausible or how true the assertions of the enthusiastic advocates of the new forms of industrial education may be, the fact remains, that the thorough schooling in the elements of the English language and of mathematics, the drilling in the primary studies which has heretofore characterized the teaching of the common schools, has been of immense and direct value, in fitting the workers of the country for their work. The industrial prosperity of the people of the United States, gives unanswerable testimony to the value of the training they have heretofore received in their common schools. These facts should not be ignored in any consideration of the changes proposed in the school curriculum, by the advocates of direct industrial training.

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* See Circular of Information No. 3, 1879, "The Value of Common School Education to Common Labor," by Dr. Edward Jarvis, of Dorchester, Mass. Pp. 37.

IT IS ART EDUCATION WHICH HAS BEEN URGED IN THIS REPORT.

To prevent any misunderstanding, attention is recalled to the fact that all the arguments in advocacy of the introduction of the study of industrial art drawing in all schools, as urged in the previous volume of this Report, were based on the admitted fact that in the common schools, and other public educational institutions of the United States, there had, hitherto, been little or no attention given to any form of education in art, while, owing to the changing forms of the world's industries, the need of instruction in the elements of art was urgent.

INDUSTRIAL EDUCATION TO BE NOW CONSIDERED.

In the present chapters, which have been, as it were, interpolated into this Report on Industrial Art Education, and which are given to industrial training regardless of whether it is artistic or not, the school studies which it is proposed to change, or supplement, are to be regarded from a different point of view.

The first question must be, how have these schools as previously directed prepared the scholars for ordinary industries? We have seen that they had made no pretense of preparing them for the art industries, and, indeed, it is a vindication of the arguments set forth in the previous volume, that the advocates of the movements for direct industrial training assume, as a matter of course, that industrial art drawing is to be taught in all schools, just as all assume that the elements of the child's mother tongue will be taught.

It is, then, a question of the direction and time that shall be given to the training in public schools; and whether there shall be any efforts made to fit the pupils for industrial employments other than those which have hitherto prevailed.

If it is once admitted that all labor is under the direction and control of the mind, then it will be readily seen that the only difference among themselves between the workers who use the hoe, the shovel, and the pick, whether in the field or the street, at the wharf or in the dark recesses of the mine, which classes them as "skilled" or "unskilled laborers," is in the *degree* in which their minds have been trained to direct their movements. It follows that the only difference between these workers in the mechanic industries and their fellow workers in other fields of intellectual activity; the writer in his study, the lawyer at the bar, and the surgeon in the delicate manipulation of his instruments, is exactly that which exists between the unskilled laborer, who has no knowledge of mechanics beyond the ability to shovel dirt in the rudest manner, and the trained engineer, on whose watchful skill, as he directs the movements of the splendid marine engines speeding the great ship over the watery waste, safety depends; or the ingenious watchmaker, whose deft fingers move in the most delicate manipulations of his craft, under the guidance of his unerring sight and his trained mind. In each instance, it is a difference of *degree, not* of *kind.*

This truth once recognized it becomes apparent that those who attempt to divide mankind into classes, putting the workers in mechanics and the simpler industries in one class, and the workers in those fields of human inquiry which demand on the part of their investigators the most thoroughly trained intellects and the most complete abnegation of self into another, and then proceed to stir up strife between them; to wake in the hearts of the workers in mechanic industries envy, jealousy, and hate toward their fellow workers in other forms of intellectual labor, are either self-seeking demagogues, or conceited sciolists, whose shallow brains cheerfully essay to solve, offhand, all the problems of life which, since the world began, have puzzled the wisest and confounded the most powerful of mankind.

THE TYRANNY OF LABOR UNIONS.

That plan, which seems the *ultima Thule* of the present leaders of so-called organized labor, by which the most skilful workers, the best trained intellects, and the most industrious men in their ranks are to be compelled to forego all the advantages to which their individual integrity, industry, and skill entitle them, in favor of the least capable members of their "union," on the pretext of keeping up wages,—the union going so far, in some cases, as to inflict a fine on a too energetic workman, for working too fast,—must, sooner or later, if working men continue to have the capacity for thought, be seen to be a tyranny of the most obnoxious kind. A tyranny which falls little short of being inimical to the whole human race, because it removes all the personal incitements for that self-culture and self-restraint without which individual excellence is impossible.

If economy, patience in acquiring superior skill, industry, temperance, thrift, are to be of no advantage to the individual;—and the insistance of equal hours of labor and equal pay to all members of a "union," whatever be their inequalities of skill or character, renders this result inevitable;—then, that community, where men in large proportionate numbers submit to such imposed conditions, must inevitably deteriorate and throned races must degrade.

In the condition of the "labor question" among all the so-called civilized peoples of the world, Anno Domini 1887, and especially in view of the importation into this free land, of the worst forms of hostility to all social order bred in other lands in reckless reaction against unjust tyrannies, and developed under conditions, of which, happily, America has hitherto been ignorant, no apology can be needed for this reference to existing facts in a discussion relating to the schools of the people; the schools in which the children of these disorganizing fugitives from despotism are to be transformed into peaceable and useful American citizens, if peace, progress, and freedom are to longer here abide! While it is not pertinent to our present subject to discuss the further difficult problems of the mutual relations between capital and labor, the topics, to the consideration of which this chapter and the first volume of this Report are given, are of interest to all citizens of the Republic who deem the education given in the schools of the people a matter of concern to all.

If those now engaged in agitation for improving the condition of the workers of the country once admit the self-evident proposition that the training of the mind must precede and underlie all successful training in skilled industries, it must follow, that upon no other class of the community have the questions we are about to consider greater claims. It is to the common schools of the country, and to the supplemental schools of technical training in industries, which are recorded in this volume, that, in the absence of apprenticeship, they must look for the opportunity of giving their children facilities for acquiring the special knowledge which alone can enable them to become skilled workmen. Since their children are to be Americans, it is obviously for their interest that the skilled workmen of the future shall be trained in America, rather than be imported from other lands.*

The solution of the problem of transforming the wild American Indian from a state of savagery to one of comparative civilization has, within the past few years, been sought by giving to the young

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*See extracts from an article in New York Tribune of April 3, 1887, on "Technical Education in New York City," Appendix K.

Indians, gathered together in schools, similar training in the elements of a common English education to that given to the young whites; while, at the same time, giving, in addition, special training in various industries adapted to the sex, and probable employments and needs of the several pupils. Thoughtful observers of the results attained, believe, that herein, lies the only feasible solution of the hitherto vexed question.

In the methods by which this success has been secured may be found pregnant suggestions for the adoption of like methods of instruction for the children of other races.

THE WORTH OF A KNOWLEDGE OF COMMON INDUSTRIES.

Whatever may be the conflicting theories as to the proper province of the public schools—into which discussion it is not proposed here to enter—there would, I think, be found little difference of opinion as to whether or not it would be well for the whole country, if such instruction of the colored children throughout the South, and of the children of white immigrants and other comparatively uneducated classes in the North, could be secured, as should give the girls such knowledge of domestic employments as is essential to the decency, comfort, and prosperity of the family, and give to the boys such skill as would secure to them profitable employment in the various trades and industries.

Throughout the South the conditions consequent upon the changed relation of the races, while they have resulted in offering to the colored children opportunities for learning to read and to acquire such simpler elements of an education as are given in common schools, on the other hand, give to the colored girl children of the present day no such opportunities, as their mothers had, of being thoroughly trained in the arts of the household,—those domestic duties, on the right performance of which the welfare of the family, and therefore of the community, so largely depends; while the boys are under no such compulsion to industrious employment, as their fathers were subjected to.

The training in household duties, in the art of cooking, in habits of neatness and industry, which characterized the old order of things, so far as the households were concerned, is no longer general; and it is by no means certain that the boys will be brought up in habits of industry; while such obedience to directions or respect for employers, as is entirely compatible with thorough self-respect, and, indeed, conduces to it, while it knits in kindly unison the relations between employers and employed, seems for the most part unknown.

This condition of affairs, which it is believed is by no means overstated, tends directly to the deterioration of the community; and is alike detrimental to the true interests as well as to the comfort and convenience of all classes, white and black, employed and employer, Since this essential feature of the useful education of individuals is no longer general in private families, it becomes of importance to know whether it can be given to classes of pupils in public institutions. Hampton, in Virginia, and the cooking schools of Boston, so benevolently set on foot and supported by Mrs. Hemenway, give, with no uncertain sound, an answer in the affirmative; while the success with which sewing has been taught in many public schools encourages the idea that such varied industrial training, as shall make life happier for all, is possible.

LOCAL INDUSTRIES MUST SHAPE LOCAL TRAINING.

If training for special occupations is to be a recognized part of the public education provided by the community, whether so provided in the free common schools or in other institutions similar to those recorded in this volume, it is clear that the kind of training given in different places must be largely modified by the peculiar industries and needs of each community.

In the comments on the report by Professor Ordway of the Swedish system of industrial work in schools, on pages 69–70, Part I, this essential condition of success has been noted, and the fact that education in art industry is particularly needed in this country emphasized; while on pages 249–50, in connection with the report of Superintendent Philbrick on industrial education, there is given a concise résumé of the educational movements in Massachusetts in these directions. The heads of a sermon by Rev. Dr. Bartol, as quoted by Dr. Philbrick, admirably summarize the favorable arguments then advanced by the friends of industrial education.

INDUSTRIAL TRAINING FOR GIRLS AS ESSENTIAL AS FOR BOYS.

The dangers arising from the existence in a community of large numbers of uneducated idle boys have been fully set forth in Part I, in the chapter entitled "Dangers Disclosed by the Census" (see page cix). The dangers arising from the presence in any community of large numbers of uneducated idle girls, or of girls ignorant of any knowledge either of household work or of other industrial employments, were not portrayed; but, to the thoughtful mind, they are none the less menacing. These are the practical questions pressing for solution. How can these future men and women be trained to habits of useful industry?

Woman as the Mother, in all her beneficent relations, is the highest Ideal of Humanity. Upon her wisdom, industry, economy, supervision, and executive direction, the character, the happiness, and the prosperity of the family depend; and this is true in all ranks of life. If large classes of girls, white or black, in any section of the country, are allowed to grow up to womanhood with no opportunities for acquiring the knowledge and the habits requisite for the successful performance of these duties, it is inevitable that society must suffer.

THE MODERN NEED OF SUCH TRAINING IN SCHOOLS AS WAS ONCE GIVEN IN HOMES.

Since in all parts of the country, from various causes, the opportunities of acquiring the necessary training are not given in their respective homes to large numbers of girls, whose only opportunity for receiving any kind of useful education is limited to the means provided by the public, the question as to what can be done to remedy these admitted deficiencies, demands consideration.

The industrial training of girls is, perhaps, of even more importance than that of boys; for the whole economic management of the household rests on the woman. The health, morals, habits, and happiness of the family are in her hands, much more than in those of the man. On the woman's knowledge or ignorance of household economies, food, cooking, and of the laws of health, largely depends the difference between the economy or wastefulness, comfort or discomfort, health or disease, cleanliness or squalor, prosperity or poverty, of the household.

The practical instruction formerly given to the colored girls in all Southern homes has ceased, since the children are no longer in the houses of the whites; they go to school, but learn there no household arts. It is equally true that, in the crowded cities and towns of the North, numbers of white school girls have now no home opportunities for acquiring this knowledge, which formerly was learned almost unconsciously in the sweet seclusion of homes. Boarding houses and tenements give little opportunity for such training. These facts need no comment. It must be admitted that industrial training is as necessary for girls as for boys, and that the field to be occupied is large enough to tax the wisdom and the wealth of the community.*

PRACTICAL QUESTIONS.

In an admirable report on country schools made by their committee on education to the Kansas State Grange† in 1881, the subject was presented in a very practical way. After reciting the educational clause in the announcement of the principles of the order, which emphasizes the importance of practical studies in the agricultural and industrial colleges, the report calls attention to the need of similar education in the common schools, since, from the Kansas school statistics of 1880, which are given, it appears that "of farmers' children not one in five hundred ever attends the Agricultural College," the attendance being less than one in twelve hundred of the whole school population.

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* For an account of what had been done in the United States to promote the "Industrial and Scientific Education of Women" down to 1885 the reader is referred to the carefully prepared, comprehensive statements to be found on pages 57–74 of the "Special Report on Industrial Education," of that date, issued by the Bureau of Education.

† Education for Farmers' Children. Report of the Standing Committee on Education, read by F. G. Adams, Chairman, at the annual meeting of the Kansas State Grange, at Topeka, December 14, 1881, and adopted by that body. Topeka, Kansas Daily Capital Publishing Company, Printers. 1881. Pp. 8.

While in nowise disparaging college education, but rather advocating and sustaining it for its influence in inciting effort for the higher walks of learning, the report says, very truly: "But for actual and direct school training and culture, the great mass of our children must receive their education in our common schools;" and they pertinently ask how this can best be done.

> How is the teacher who is herself, in most instances, but a school girl yet in her teens, to be expected to be competent to teach "practical agriculture" to our boys? And what is there of "domestic science" and of the "arts which adorn the home" that she may find time to teach our girls, with all the exactions upon her to give instruction and training in reading, writing, spelling, arithmetic, geography, English grammar, and history?

They answer the query by recommending a thorough revision of the list of present school studies and of the methods of teaching, and suggest that the time thus saved be given to elementary instruction in the natural sciences, the laws of health, the nature of the soils, etc., and that the attention of the children be directed to a close observation of natural objects about them, in which the teacher is expected to interest them.

> Of all these things our girls, as well as our boys, may be taught something; and they, too, may be taught no little of the chemistry of cooking and of household economy.
>
> How otherwise than by such instruction, in the only schools they are enabled to attend, are the boys and girls who are soon to succeed us to keep pace with the rapid expansion, acquisition, and diffusion of knowledge which is coming to pervade all classes in this age of progress? How are they to cope with their competitors, who, in the cities and towns, by being brought every day into contact with intelligence and enterprise, experiment and invention, are constantly stimulated to activity and incited to worthy achievements?

It will be seen that in this last paragraph the comparative advantages of city life are suggested, and, by inference, the wisdom of adapting school instruction to local conditions, in recognition of the fact that the educational needs of country and city children may be, in many details, quite different; while it is everywhere evident that the efforts of educators should, on the one hand, be directed to making the best use of the special advantages, and, on the other, to guard by special training against any disadvantages incident to their surroundings.

CHAPTER VIII.

AN ATTEMPT TO ANALYZE AND DEFINE THE TERM "INDUSTRIAL EDUCATION."

A suggestion by Professor Adler—Classification suggested in Four Groups, viz.: (1) Higher Institutions of Technical Training; (2) Trade Schools; (3) Manual Training Schools; (4) Elementary Instruction in Industries given in common schools—European "Trade Schools"—Some American schools of similar purpose—The Hebrew Education Society, Philadelphia—Opposition by Labor Unions to the teaching of trades to American youth—"Manual Training as a factor in Education" and "Elementary training in Industries in common schools" are the two topics treated in the present chapter and those immediately following—The advocates of the new educational movement claim that it comprises a logical system of pedagogy—This claim questioned by other educators—The excellences of the old methods depicted—Defects in the old-time schools of New England strikingly stated by Horace Mann—Mr. Mann's criticisms considered—Some excellences of the old training appear in his very indictment—The people brought up in those schools exemplify their worth—The pupils of that day had little need for school training in industries—The arguments advanced by advocates of the new methods—Reference to a witty address by an opponent—Room for adoption of best features of both the old and the new methods—The personal inspiration of a true Teacher is, after all, the one essential factor in every school—Graded schools in cities necessitate organization and common methods of instruction by the teachers—Nature cares equally for all—The Republic and the free schools are in accord with that equality of rights which Nature implies.

A COMPLEX SUBJECT.

The subject of "Industrial Education," as considered by educators, is, as has already been suggested, complex and exceedingly liable to misconstruction. So great is this liability that Professor Adler, who believes in the higher education and development of humanity, and who values "manual training" in schools, as well as industrial art instruction, only as affording new and efficient methods for obtaining educational results, wholly without reference to their practical bearing on industries, proposes that those who have the higher educational aim in view, shall abandon the use of the ambiguous phrase, and substitute for it the words "the creative method;" as a term indicative of all the forms of industrial training which are used solely with a view to their pedagogic value in aiding to develop all the faculties of the human being.

As, at present, it is proposed to consider here only those forms of industrial training which may be found suitable for the common schools; an attempt at a brief analysis and description, of the several groups, of schools and methods, which may fairly be comprised under the general designation of "Industrial Education," follows, There are at least four different phases of the subject which may be included under the common designation of "Industrial Education." These are—

First. "Technical Training," used in a sense not synonymous with "Industrial Education."

Second. "Trade Schools."

Third. "Manual Training," regarded simply as a factor in the general education of the child's faculties.

Fourth. "Elementary Instruction in the Industries," with the direct purpose of practical application.

Under the first head may be grouped the various Schools of Technology, Schools of Science, Colleges of Agriculture, etc., full accounts of which were given in the special report on "Industrial Education in the United States," published by the Bureau of Education in 1883. Accounts of these Technical Institutions will be given in the present Report only so far as their courses in drawing, or other branches of industrial art, may bring them within the scope of this work.

An examination of these institutions will show that, while they have many characteristics in common, they often differ widely in their purposes and methods, according as they seek to train original investigators in science; to qualify their pupils for the direction of great enterprises in mining, civil engineering, or machine making; to make architects, to train art designers; to prepare teachers of science and professors in similar institutions; or to fit their students to become overseers of manufactories and practical mechanics of the higher class.

The second division, "The Trade Schools," consists of a limited class of special schools in Switzerland, Holland, and France, which are as yet comparatively unknown in this country. It is quite possible that in some communities here they may eventually be found desirable.*

Just as in this country, the business colleges are designed to train pupils in a knowledge of penmanship and book-keeping, and to familiarize them with the routine of the machinery of trade in its financial features, and with the method of making complete records of mercantile transactions and of tracing them through all their ramifications, there are, in some countries of Europe, schools in which the pupils are thoroughly initiated in all the details of trade, and familiarized with everything directly or remotely relating to the production—that is, to the mining and smelting of ores; or to the cultivation, manufacture, and transportation of such other articles of commerce, as are dealt in by those merchants who carry on the kind of business in which the pupils propose to engage. This, it will be observed, is a practical application on a large scale of the "object lesson method" to the training of traders.

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* For an account of these schools in Switzerland, see report of Hon. Boyd Winchester, Appendix K.

A large class of European "Trade Schools," more strictly allied to industrial training, are those in which the pupils are taught the mechanical manipulations of some special employment, are trained in definite trades, so as to become "skilled artisans" in the special industry of the community in which the school is situated. An appropriate appellation of these schools would seem to be "Apprentice Schools," for they assume to do for their pupils just what the master of old time undertook to do for his indentured apprentice—that is, to make him, in turn, a master of the craft.

Some classes of this kind were established in New York, a few years since, through the public spirited liberality of Mr. Auchmuty, which were for a time under the auspices of the Metropolitan Museum of Art and in the same building with the Art Schools proper of that institution; as were also the schools of "The Carriage Builders' Association;" but, as the art classes of the Museum School, under the later wise directorship of Mr. Stimson, have happily developed into classes in which a knowledge of art is regarded as an essential preliminary to the teaching of any special applications of art to industry; the other classes have removed elsewhere, and flourish independently. These last are purely practical and technical trade-teaching schools; in which plumbing, masonry, and other like industries which demand special knowledge and skill are taught.

THE HEBREW INDUSTRIAL SCHOOL IN PHILADELPHIA.

In Philadelphia, the experiment of the direct teaching of industries has also been successfully tried by the "Hebrew Education Society."*

This attempt was first made in the hope of reaching the children of a colony of Russian Jews, who were never sent to any school, but at an early age were sent out as street peddlers. Inducements were at first given for their attendance and some simple industries taught them; later, in connection with this effort, a class for older boys was formed to learn the art of cutting garments, which has been successfully taught. Against the cutters here trained, as against the artisans graduating from the schools founded by Mr. Auchmuty, in New York, the labor union men make war. This illustrates the difficulty of giving any practical training in the industries, in this country, to the children of Americans.†

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*Report of the Hebrew Education Society of Philadelphia for the year ending April 1, 1887. Pp. 19.

† In this connection the following editorial from the Washington Post of April 8 is apropos: "It is rather hard on the average apprentice in this free country that he cannot even begin to learn a trade without all the employés in the shop striking. This is what happened a few days ago at the glassworks in Sandwich, Mass. An

The "Unions" welcome foreign born and bred artisans, but throw every obstacle in the way of training American youths to become skilled artisans. By this policy they force upon the attention of educators and legislators, evidences of the pressing need that exists for devising some practical methods whereby the rising generation may have the opportunity, hitherto denied them, of acquiring definite technical training in skilled industries. The arguments showing the necessity of the further development of technical industrial training in this country, will be found admirably and tersely set forth on pages 74–77 of the Special Report by the Bureau of Education in 1883, on Industrial Education, before referred to.

INDUSTRIAL TRAINING FOR PUBLIC SCHOOLS.

As these chapters are given to an account of the recent movements for the introduction of some forms of industrial training in connection with the public schools only, and as there seems a pretty general consensus of opinion that, at present at all events, attempts to teach definite trades cannot possibly be undertaken in the public schools, certainly not in the lower grades, beyond which only a comparatively small number of school children advance; and, as the supplementary schools and classes for technical training in art industries are treated elsewhere in this volume, the question of how technical training shall be undertaken by institutions other than the public schools need not be here further considered. The brief reference to the two varieties of European trade schools, and to one or two schools in this country in which somewhat similar methods are used, must here suffice; since our present purpose is to confine the consideration strictly to matters relating to the free public schools.

It is, then, only with the two final topics in this list that we are now concerned, namely: with (3) "Manual Training" considered simply as a factor in education, and (4) with kindred exercises taught with the direct purpose of training practical workers in the varied industries.

These two topics will be found almost inextricably blended in the several statements by educators, which follow; varying, as now one phase, and now the other, are considered by those reporting the results of the experiments in their several localities.

The ardent enthusiasm of the believers in what they hail as a brand-new invention for the speedy and sensible education of children, and which some would carry through all the years of school

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apprentice was engaged in the cutting department, when the workmen felt aggrieved and marched out. This is both absurd and cruel. An apprentice should be made welcome, and helped to learn his trade as soon as possible. There is no other sensible course to pursue. And as many working men persist in denying apprentices a chance to learn a trade, public schools must be established where they can be taught free and unmolested."

training, making of the Kindergarten, the object lessons, the so-called Quincy method, manual training, and finally technical instruction in special industries, a logical and continuous system of practical education, has aroused opposition from those who believe there *is* such a thing as the education and cultivation of the intellect as well as the senses; that the modern innovation of teaching down to the capacity of the stupidest child, and of never demanding any abstract intellectual effort, is an abnegation of the noblest province of education, a belittling of the office of the teacher, and a dwarfing of the mind of the child.

THE WORTH OF THE PEOPLE'S SCHOOLS IN THE PAST.

The views of those educators who believe that the development of the intellect, the strengthening it for highest flights, for closest reasoning, for long-continued abstract exercise, is the main purpose of education; so that the man shall be master of his mind, and capable of directing, and using at will, that noblest implement, the Human Intellect, are deserving of thoughtful consideration.

The old education, some essential features of which they would fain preserve, continually sought to raise the mind of the child to a higher level; to awaken aspiration and kindle ideas, rather than to bring down knowledge to the lower plane of the child's supposed capacities.

This method of calling out the powers of the intellect, bred a forceful and thoughtful race of men and women; whose only academies were the humble district schools, and to whom the Sabbath sermons, and the inevitable drill in the Shorter Catechism, served for the higher mental discipline. This people's training in the district schools was, also, of kindred spirit and character, with that education in the Classics in which those masters of the theory and science of Government were trained, who gave such lustre to the early years of this Republic; by whom, all the experiments in government that had been tried, and all the theories that had been propounded in the past of history, were reviewed; and the new Nation established. The methods of education which gave these results are equally open to all the shafts of wit and ridicule, which the modern apostles of scientific materialism let fly against the study of metaphysics, and the classical training of the intellect.

The abstract teaching of later days, also, bred a race of men who carried this country safe through stress and storm.

On the other hand, that, in the olden days there were certain grave defects and deficiencies in the ordinary methods of teaching, which the training of the Kindergarten, teaching by Object Lessons, and the study of Industrial Art Drawing, are designed both to remedy and supply, must in fairness be admitted.

A clear statement of these shortcomings of the early New England schools is found in an autobiographical letter written, long ago, to a friend, by the late Horace Mann, the great educational leader, and given in the "Biographical Sketch," published by Henry Barnard, himself a leading educator, in 1858.*

It is, however, to be said in this instance,—as in reference to that arraignment of the schools of a generation later, recently pronounced by General Francis A. Walker, and elsewhere referred to in this volume,—that the early training, out of which came such masterful users of vigorous, polished, eloquent English as are these two writers, must have had, spite of all evident faults, positive excellences.

Mr. Mann has been referring rather sadly to the toil and privations of his early childhood, and to his instinctive love for beauty and his sensitiveness to it, both in nature and in art. A love which met with no sympathy, recognition, or guidance. He says:

> My teachers were very good people but they were very poor teachers. Looking back to the school days of my mates and myself, I cannot adopt the line of Virgil, "O fortunatos nimium sua si bona norint." I deny the *bona*. With the infinite universe around us, all ready to be daguerreotyped upon our souls, we were never placed at the right focus to receive its glorious images. I had an intense natural love of beauty, and of its expression in nature and in the fine arts. As "a poet was in Murray lost," so at least an amateur poet, if not an artist, was lost in me. How often, when a boy, did I stop, like Akenside's hind, to gaze on the glorious sunset; and lie down upon my back, at night, on the earth, to look at the heavens. Yet with all our senses and our faculties glowing and receptive, how little were we taught; or rather, how much obstruction was thrust between us and nature's teachings. Our eyes were never trained to distinguish forms or colors. Our ears were strangers to music. So far from being taught the art of drawing, which is a beautiful language by itself, I well remember that when the impulse to express in pictures what I could not express in words was so strong that, as Cowper says, it tingled down to my fingers, then my knuckles were rapped with the heavy ruler of the teacher, or cut with his rod, so that an artificial tingling soon drove away the natural. Such youthful buoyancy as even severity could not repress was our only dancing master. Of all our faculties, the memory for words was the only one specially appealed to. The most comprehensive generalizations of men were given us, instead of the facts from which those generalizations were formed. All ideas outside of the book were contraband articles, which the teacher confiscated, or rather flung overboard. Oh, when the intense and burning activity of youthful faculties shall find employment in salutary and pleasing studies or occupations, then will parents be able to judge better of the alledged proneness of children to mischief. Until then, children have not a fair trial before their judges.

In the very midst of this indictment is to be found, in three short sentences, the secret of the saving excellence of these much abused schools of the past: the means by which, in spite of all their evident deficiencies as measured by modern standards, they trained up the men and women of Massachusetts into a population whose general intelligence, love of learning, industry, thrift, and integrity met with world-wide recognition, and whose zeal for the promotion of education ever kept pace with their increasing prosperity.

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* Barnard's American Journal of Education for December, 1858.

It was by that very exclusion of the contemplation of external nature, of which Mr. Mann so bitterly complains, not without reason, that all the powers of attention of teacher and pupil were thus concentrated on the three essentials of education,—the cultivation of the memory, the acquisition of the language, and that faculty of continuous attention which alone gives the power of abstract reasoning, by which "the generalizations of men," instead of "the facts" on which they were formed, are comprehended. Whatever would distract the attention from the business in hand was relentlessly "flung overboard," as, in his vivid word-picture, Mr. Mann dramatically says.

Let us examine for a moment this analysis of his teacher's methods: First: "Memory for words" was the faculty "especially appealed to";—Well, is not this a clear following of the indication of nature? Is not the acquisition of a vocabulary one of the first things she sets her baby man to learn? Is not this matter of articulate sound the earliest discrimination between man and other animals? Second: The early cultivation of memory! Is there not an ancient proverb about the memory of the child being "wax to receive and marble to retain?" Memory and language first, then follows what? Not a mere accumulation of facts; not a striving after simplicity to bring down the subjects taught to the supposed low capacity of the infant mind, so that the child should never be called on to exert its own powers, but always be fed on such sloppy spoon victuals as are many of the modern books for children. No! No! Books were not so plenty then, nor were the youth so pampered. At home and at school they were expected to work, just as men and women worked, only the daily task was not quite so large! The child's memory had been given a certain store of words,—he had a vocabulary; now, as he advanced in years, the next step was the development of the reasoning faculties,—"the most comprehensive generalizations of men were given." Any one who was ever made, as all youth were then made, to memorize the "Shorter Catechism," and has lived to reflect upon its abstruse metaphysical assertions, will understand what Mr. Mann refers to in that statement. So, according to the evidence of this most competent witness, the old method trained the memory, gave careful attention to the correct use of language, and then sought to develop the thinking, reflecting powers of the mind. Not such a very meagre outfit for the future man in his contact with his fellows! The education of those days took for its motto, and lived up to it, Pope's well known aphorism, "The proper study of mankind is man"—man, in his threefold nature, and, accepting unquestioningly the fact of his immortality, busied itself about his future destiny. Well, we may perhaps be permitted to ask, what is the significance of all this modern nature-study, except so far as it relates to man?

This old-time district school training of New England did one thing more, whatever else it may have failed to do, or, at any rate, if the credit of this be denied to these schools, it cannot be denied that the people, who had had only this common school training, were themselves imbued with and inspired their children with a reverence and love for learning. This respect for learning was held by all, even where books were few and the amount of book-learning scant. How prevalent and how forceful were these ideas is seen in these further extracts from Mr. Mann's letter:

> Yet with all these obstructions, I had a love of knowledge which nothing could repress. An inward voice raised its plaint forever in my heart for something nobler and better. And if my parents had not the means to give me knowledge they intensified the love of it. They always spoke of learning and learned men with enthusiasm and a kind of reverence. I was taught to take care of the few books we had as though there was something sacred about them. I never dog's-eared one in my life, nor profanely scribbled upon title-pages, margin, or fly-leaf, and would as soon have stuck a pin through my flesh as through the pages of a book. * * * I said we had but few books. The town, however, owned a small library. When incorporated, it was named after Dr. Franklin, whose reputation was then not only at its zenith, but, like the sun over Gibeon, was still standing there. As an acknowledgment of the compliment, he offered them a bell for their church, but afterward, saying that, from what he had learned of the character of the people, he thought they would prefer sense to sound, he changed the gift into a library."

It would not be easy to measure the inspiring influence of the few early town and school libraries scattered here and there through New England. They were like green, spring fed oases in a desert land. Mr. Mann's appreciation of them is thus shown in another line of his letter, "Had I the power, I would scatter libraries over the whole land, as a sower sows his wheat field;" which recalls a remark once made to the writer by Charles Sumner in reference to national aid for education. Said he, "I would empty the Treasury for education." Each realized that an intelligent people constitute the greatest riches and safeguard of a country.

In contrasting the present with the past, as portrayed in Mr. Mann's letter, it must be kept in mind that the need for definite manual and industrial training which now exists in many of the American larger towns, and in the cities, was then unknown. The great tides of foreign immigration had not begun to pour in upon the continent, the first movement having its origin in the enforced flight of starving people from famine smitten Ireland in 1846.

American youth were, for the most part, in town and country, brought up to *do* something. In the rural districts school terms were short, while the farm work lasted the year round. "Until the age of fifteen," says Mr. Mann, "I had never been to school more than eight or ten weeks in a year." The children had plenty of muscular development and manual training in farm work, dairy and house work. They had an intimate acquaintance with domestic animals, and such wild "small deer" as were left in the woods and meadows. These important differences in the surrounding circumstances are to be kept in mind when comparing the schools of the different eras. This same Horace Mann, later to win world-wide fame as one of the greatest educators of his time, the greatest America has yet known, lived, till he was twenty years of age, on a small farm; all his early schooling was in the common district school of a poor town; but, later, he was fortunate in meeting with a man who was remarkable as a teacher of the classics, by whom he was thoroughly drilled in the Latin and Greek languages, that is, in the memory and uses of "words" again; and so he went from his narrow life on the country farm to the university.

Now when such critics of the old methods as are Horace Mann and Francis A. Walker are pointed out as themselves the products of those methods, it is no sufficient answer to say, as is sometimes done, that they are exceptional men, who would have developed spite of the faults of any system, and that therefore, the old methods are not entitled to any credit for their admitted excellences. It is granted that they are of exceptional ability, and in a similar sense Daniel Webster was exceptional, but the important fact remains that they have displayed their ability just as Webster did, by the very manifestations that they might logically have been expected to show as the result of their education begun in the common schools of New England; that is, in the skilful use of a copious vocabulary, in lucidity of statement, and in power of close reasoning. Now, in proof of this, the men and women of their generation, taught as they were in school, showed the same qualities; only in differing degrees, as they were more or less exceptionally endowed and had enjoyed subsequent opportunities. The use and appreciation of good English, the power of concentrated attention, the capacity to reason, the fondness for argument were the intellectual characteristics of New Englanders as a people, sixty and even thirty years ago;—the contemporaries of Mann and of Walker. Their knowledge of mechanics, of the application of intellect to industry, witnessed to by the excellence of their manufactures and by their numberless inventions, is sufficient proof that they were not *then* suffering for lack of manual training schools, or general industrial training. The one thing that neither the schools or the society of New England then furnished was a knowledge of Art and of its manifold application to industry; and, since that was lacking in New England, it has since been wanting in the whole country; for it is the educational ideals of New England which have, in a great degree, modelled, inspired, and vitalized the educational systems of the country.

Since, as we have seen, all intelligent exertion of the muscles must be the outcome of intelligent direction by the mind, it follows that, other things being equal, the highest, broadest, most complete development of the intellect is the ideal of true education.

If, as many believe, the excessive use of Kindergarten methods and of object teaching, carried beyond the earliest years of child-life, tends to so weaken the mental powers, because they are neither developed nor called into exercise, that a pupil taught wholly on this plan is incapable of close abstract thought; then it is time to call a halt. These new methods, this attention given to direct training of eye and hand, unquestionably valuable as means, must be used and not abused. Nor, under the pressing incitements of practical needs, must the higher ends of education be overlooked.

The fear of such a result, led many of the wisest educators to hold aloof from the early propositions to introduce industrial training in schools. It is yet uncertain, whether much more than thorough training in industrial art-drawing can wisely be given in the elementary public schools.

ARGUMENTS OF THE ADVOCATES OF THE NEW METHODS.

It is only just to some of the ablest advocates of these unfamiliar forms of education, to state, here, that they strenuously deny that there is any such necessary result from the use of these new methods; on the contrary, they aver that the training in the close observation of the objects presented, which is the direct result of the object lesson method, gives precision to the thought, and tends to develop the power of comparing different objects; so that one thus trained can detect difference and recognize likeness, much more readily. They further claim that, since the acquisition of this power of accurate discrimination forms the very essence of true scholarship, and is the basis on which abstract speculation must rest, the new methods give not less, but more, available intellectual power, than the old ways of education which took no cognizance of material objects.

The experienced educator, who for years has been superintendent of the Worcester, Mass., city schools, in a recent thoughtful and witty address,* set forth the old New England methods and their results, showing how then, the youthful minds were brought into contact with the writings of the great masters of English and made to endeavor to comprehend their masterpieces.

The contrast between the noble passages from which language was then taught and the wishy-washy weakness of much modern reading provided for the study or amusement of children, is striking and suggestive.

A query occurs: It is, whether the children of generations of

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*"Presumption of Brains," by Albert P. Marble, Ph. D., Superintendent of Schools, Worcester, Mass. Boston: New England Publishing Company, 3 Somerset street. Pp. 15.

Americans so educated have much to gain from the methods adapted to the mental condition of children of unlettered European parents or to children of slower perception than the Americans?

However, in crowded cities, and in many country communities in America, there are numbers of children of immigrants, as well as numbers of colored children in the South, among whom these methods may be advantageously employed.

Another suggestion may perhaps be ventured, and that is that the value of methods of patent machinery may be very easily overrated. There are two essential factors, and only two, in every school, the teacher and the pupil; all others are trivial and subordinate. Walter Smith's great influence was due to the fact that he was marvellously endowed as a teacher—an inspirer of others. So the important question is not whether one set of drawing books or geographies is better or worse than another, but whether this given teacher is capable of developing most fully and wisely the capacities of that given pupil. So far as methods, text-books, machinery of discipline, interfere with that vital result, so far they are all nuisances.

It is very easy and very common to consider that some particular method, discipline, or apparatus of education is indispensable, but all experience has proved the futility of such reliance.

It must, nevertheless, be recognized that in communities in which a large number of graded schools are collected in one building, and many teachers are employed under the supervision of one principal, there is necessity for organization and for the adoption of some common methods of imparting instruction, and of preserving requisite order, to be followed by the several teachers; and it appears, further, that no studies which cannot be thus taught, and to many pupils simultaneously, are practicable in these public schools. Fortunately it is found that the essential studies can be so taught. Drawing and elementary industrial training have proved particularly well suited to the conditions found in the public schools of the United States.

The heaven-born teacher will still excel, and cannot be too highly valued or extolled; but Nature does not leave her children wholly dependent upon exceptional instances. Her universal gifts are, after all, her best gifts. The best things are common to all.

> "I care not, Fortune, what you me deny:
> You cannot rob me of free Nature's grace;
> You cannot shut the windows of the sky,
> Through which Aurora shows her brightening face!"

The sun rises and sets; the blue vault of Heaven o'erarches all; the stars, in sublime procession, hold ever their nightly march; the seasons recur each in their appointed time; the tides of ocean ebb and flow in ordered sequence; and, to every free soul, these wonders constantly appeal. They are the common heritage of the race. No man can appropriate them. No pomp and splendor of Kings or Potentates, can for a moment compare with the magnificence of Nature in her common, everyday aspects as shown for all men to see. The lesson thus set for man to learn is that of a common brotherhood and heritage; that as man, he is free of the Universe, and that claims to special prerogatives by any class of men are, *ipso facto,* to be questioned. The foundations of the Republic and of the free public schools rest alike in their accordance with these immutable intimations of Nature.

CHAPTER IX.

THE DIRECTION AND AMOUNT OF INDUSTRIAL EDUCATION IN PUBLIC SCHOOLS LARGELY DEPENDENT ON LOCAL ENVIRONMENT.

The amount and kind of industrial training to be given in schools must be adapted to character of attendance—The probable length of time the pupil will remain in school a most important factor in the educational problem—"Manual Training Schools," purpose of, as announced by the school authorities of Baltimore—Schools of this class unsuited to boys under fourteen years of age—The plan adopted in Omaha—The proposition to establish "Manual Training Schools" a question by itself—The introduction of simpler forms of industrial training in the schools of lower grades a matter of more general and immediate interest—What forms of this training are fitted for these schools?—What for rural schools?—Some knowledge of common industries and common tools, useful to all boys and girls—Actual experiments in putting industrial training in schools in various places recited in later chapters—Since drawing is successfully taught to classes simultaneously, it is no longer a question of *How*, but of *What* to teach in the schools—A difficult problem remains—How shall the school-taught boy find entrance into active work?—The institutions recorded later in the volume will show how this problem was attacked in the past—The Public largely indebted to private benevolent educational enterprises—Private efforts, however, ever inadequate to cope with public needs—The Manual Training School as a part of the system of Public Schools is under essentially different conditions from its prototype, the incorporated Manual Training School—The arguments suited to the latter may be wholly unsuited to the new conditions—Local industries must shape local training—How can the connection between schools and trades be so established as to enable the trained boy to step from work school to workshop?—The ever-increasing need of a feasible solution of this problem suggests possible future important changes, and an indefinite enlargement of public industrial training—Startling statements concerning European competition in the technical training of artisans for America.

LOCAL ENVIRONMENT A CONTROLLING INFLUENCE.

In questions relating to the studies most useful for the public schools there is much to be considered. The locality, which determines the character of attendance in the given school and on which depends the time the majority of the children will probably remain in school, is an important factor; because the length of time the child will remain should indicate the kind of instruction to be given, and decide the question as to whether the effort shall be to fit the pupils for a higher grade of school, or to give the best fit possible for life without further schooling. This factor of the educational problem has been very generally overlooked, It will then readily appear that the kind of industrial education to be given must be somewhat different when it is to apply to schools in which pupils attend only till they are twelve or fourteen years of age, than when designed for those primary schools from which the pupils expect to advance in course through the higher grades till they have reached the age of eighteen or nineteen years.

MANUAL TRAINING SCHOOLS.

Owing to these essential differences of conditions there will be found a marked distinction between the various methods urged for the promotion of the new educational ideas. "Manual Training Schools" proper, apply only to boys of fourteen or over; and are thus self-limited to a minority of the public school boys.

"Industrial education," which, used in the broadest sense, would, of course, also take in Manual Training Schools, and even here in its more limited sense may include Kindergarten, Kitchen Gardens, "The Whittling School," modelling in clay, "Minor Arts," sewing schools, cooking classes, etc., is applicable to all classes of schools and to pupils of all ages.

For the typical "Manual Training School," whether established as a part of the public school machinery or by associations of individuals, the school attached to the Washington University of St. Louis, and the one under the fostering care of the Massachusetts Institute of Technology in Boston, are taken as models.

These two schools, themselves modelled after the Russian Strogonoff School, and the Imperial Training School at St. Petersburg, are described at length in volume III.

In urging the adoption of a school of this class as one of the public schools of their city, the advocates of this new enterprise in Baltimore looked, not to giving to the boys fitting for the classical colleges and universities an additional advantage; but their main purpose was, as clearly stated, to provide for those youth who did not design to pursue their studies in institutions of higher learning, but who were to graduate directly from the public schools into the duties of practical life, educational advantages similar in purpose, though unlike in kind, to those provided for their fellows who were preparing for college; and, with this end in view, to substitute, in place of lessons in the Latin and Greek languages, training in drawing and practical instruction in the use of wood and iron working tools.

This seems a justifiable purpose and can be urged on the grounds of equal justice to all. It has, however, in other places since been urged that similar instruction be attached to the high school proper, so as also to give to the boys fitting for college the additional advantage of this industrial training; this is urged on the assumption that the training in the use of mechanical tools is desirable for all; for the professional man as well as for the man who proposes to devote himself to industrial mechanical pursuits. In the city of Omaha, Nebraska, a manual training department has thus been attached to the high school, and consequently the claim is made that this is the first city to initiate the experiment of incorporating a manual training school into the regular public school system of a city, since, in the city of Baltimore, Maryland, where a manual training school was first set up by the public school authorities, an entirely novel form of school was established, while in Omaha, the high school was retained with all its features, a manual training department being simply added, the exercises of which all the high school pupils were permitted to attend. This latter plan throws an additional burden of proof upon the advocates of the introduction of this feature of manual training in the public schools, namely: the necessity of showing, first, that this training is equally valuable for all pupils, and, second, that the additional work will not overtax the pupils, who are required, at the same time, to keep up their preparatory studies for college.

There are other preliminary considerations of importance; incident, however, to the proposal to introduce schools of this class in any form. These are: First. Is the given community justified in incurring for the support of its public schools the inevitable additional expense of establishing and keeping up a first class manual training school, with its costly plant of machinery and additional teachers? Second. If the first cost of procuring the machinery, etc., can be met, the question still remains as to whether this special form of school can be sustained without too great a demand on the public funds provided for keeping up all the schools; so that provision for the primary and lower grade schools, in which the majority of the children are to be taught, shall not in any wise be impaired. These last are serious questions, which are to be met at the very outset of any movement for the addition of such schools to the public-school system; they must be decided by each community for itself, in accordance with its aggregate wisdom and wealth.

It will be seen that this question of establishing schools of manual training is a question by itself, applicable only to the higher grades of schools. It is distinct from the questions which arise when the introduction of other forms of industrial training in the lower grades of the public schools are under consideration. Further than this, the manual training schools are a class of institutions adapted only to the larger towns and to cities, their cost effectually prohibiting their more general introduction. Nor, looked at practically, is this limitation to be particularly deplored. So far as their courses lead directly to the increase of workers in wood and iron, there is in every community a limit to the demand for workers in such industries. Neither blacksmiths nor carpenters are needed in unlimited numbers.

KNOWLEDGE ABOUT COMMON INDUSTRIES DESIRABLE FOR ALL BOYS AND GIRLS.

On the other hand, when the question of considering what industrial lessons may be profitably given to school children generally, in addition to thorough training in industrial drawing which should be universally taught, it may safely be said that there is no boy who will not be better equipped for any position in life by a familiarity with the names and uses of all the simple tools of the farmer and the carpenter. To be able to use skilfully the shovel, spade, hoe, and rake; to hammer a nail straight; to use the saw, axe, auger, chisel, plane, gouge, and square cannot fail to make him more useful to himself and others, and this practical knowledge is very desirable, provided it can be acquired without too greatly diminishing the time needed by the boy to acquire a sufficient knowledge of his own language, and of those elementary studies in which he must be thoroughly grounded, if he is ever to be able to make himself an intelligent American citizen, fit to exercise the franchise with which he is to be intrusted; while the use of the needle is equally desirable for every girl. It is, besides, desirable for all girls to know how all the work of the house should be done; to become proficient in the knowledge of those domestic arts on which the neatness, health, and comfort of the home depend, such as sweeping, dusting, bed making, arranging of furniture and of the table; and, further, to know how to purchase, prepare, and serve the food; that is, to have something of the skill of the caterer, the cook, and the waiter. There is no girl in any position in life who will not be the better equipped for whatever duties she may be called to undertake by possessing as much of this domestic knowledge as she can acquire.

It will thus be seen that the needs for the industrial training of both sexes are many and comprehensive. The practical questions for consideration relate to the advisability and means of speedily adapting such training to the capacities of the children in the several grades of the public schools. What can be wisely done in the lowest grade of schools? How shall the courses be so graded as to give to the pupils in each grade the best preparation for life in case the child fails to continue longer in school? What class of schools needs to be added to those now existing, to supplement the book knowledge now given to the girls in the High School, with the special training in the arts of domestic economy? This knowledge is surely as desirable for them, as practice with wood and iron working tools is for the boys in the High School. These are some of the problems of present interest to educators and people.

It will be seen, in the following chapters, that each and all of these problems have been considered and their solution essayed somewhere in these United States. As yet, it is too soon to affirm positively that all of them are solved satisfactorily, but, on the other hand, some things have been definitely settled; and had the introduction of industrial art drawing in the public schools accomplished nothing else, the proof that it has given of the possibility of teaching the same thing simultaneously to large numbers of pupils, amply justifies all the time, labor, and money it has cost.

This possibility multiplies indefinitely the power of the public schools. That whatever in the way of "doing" it is desirable that the school children should know can be taught in these schools, has been absolutely demonstrated. The only question now remaining in the case of any given school or of any system of schools is, what is it that it is desirable for these children to learn?

Just as a knowledge of the elements of English, of drawing, and of mathematics is recognized as desirable for all children, so there may be certain elementary forms of industrial training which can be equally taught to all, and may be as readily agreed upon as desirable. What can be done with the primary school children? What can be done in the lower grade schools of crowded cities? What in rural schools in sparsely settled neighborhoods? These are the immediate questions which affect by far the larger number of public school children. When the higher grades of schools are reached, and when special training for the scholars in the High School is in question, the problems are of another class, into the solution of which the element of probable cost largely enters.

What I would suggest, is, that this question of industrial education is not only complex, but multiplex. It is to be resolved into its component factors or classes; and the problems of each are to be met and solved separately. If this is conceded, and the subject thus approached, I believe most of the difficulties will prove to have been apparent, rather than real. Each grade of school will be found to have its own special needs and opportunities; each locality, also, to possess its own special demands and facilities. In one place, the public will be found already prepared to take up the new methods and successfully apply them; in another, the initiation will depend wholly on private benevolence and enterprise.

There are some further problems suggested for consideration in the following paragraphs, which, it would seem, must sooner or later demand solution.

HOW CAN THE INDUSTRIALLY TRAINED BOYS ENTER TRADES?

Assuming, for the purpose of stating these suggestions, that the introduction of some form of industrial training should have been successfully accomplished, not only in the schools of cities and towns, but also in the country schools; that all the boys have been taught the uses of the simpler tools of the mechanic, and that in the larger places the manual training schools, with their courses in wood and iron working, have been established, what then? The complaint now is, that the boys graduating from the public schools, are fit only for clerks and book-keepers. The reply has been, that these were the only places open to them; both because their school training had fitted them for no other employments, and, also, because there were no opportunities for them to learn to be artisans. Well, if this is so, how will the introduction of such other training, as has just been referred to, change these conditions?

What is it that will effect, first, the change in their wishes and desires, so that they will *wish* to become mechanics? Second, if they wish to enter trades how are they to do so? Will not the same difficulties that now exist, of finding entrance into the trades, remain? In other words, is it not essential that, in some way, a connection shall be established between the schools and the trades? Otherwise, where does this industrial training lead? Is it not analogous to an elaborate flight of stairs ending in mid air! A ladder, leading nowhere?

If this industrial educational movement in the schools is to do anything more practical than to serve simply as an ingenious and valuable adjunct to the appliances of education, a mere phase of the general discipline and culture of the pupil, such as Professor Adler and his friends wish it to be regarded, then it seems clear that something further than has yet been proposed must be devised, either by the public school authorites or by private enterprise; some instrumentality which shall connect the school graduate, familiarized with the use of tools, with the opportunities for entering at once upon some opening for the practical application of this knowledge. Technical schools and Trade schools must become a necessity, in such a shape that through them introduction to the practical work of the world can be secured by the pupils of the public schools; or else these pupils will, on leaving school, still be forced to seek the employments now open to them; since there is no better opportunity offered them now, than heretofore, for introduction into the ranks of skilled labor.

The several institutions recorded in the succeeding volume of this Report are evidences of past efforts made by the public spirited citizens to solve this problem, as it was presented by the schools before the introduction in them of any form of industrial training had been proposed. They may now serve to point the direction which the further movements of public education must follow, and to offer in some cases a type of the kind of schools indicated.

It is everywhere apparent that private benevolence or enterprise, munificent and effective as they have proved in many splendid instances, are, nevertheless, wholly unequal to the adequate supply of the educational needs of a people. It is the province of private generosity to initiate the experiments, to demonstrate the wisdom and practicability of the proposed innovations, and the history of this country is illumined by the record of such services undertaken by large-hearted individuals. It, nevertheless, remains true that in cases where the novel methods have proved desirable, the community has adopted them in order that all might participate in their benefits. Among the more recent instances of this public action may be cited the adoption by the Boston school authorities of the cooking classes first started by Mrs. Hemenway, and the recent large increase in the annual appropriation made to the Maryland Institute by the city authorities of Baltimore.

THE CONDITIONS OF MANUAL TRAINING SCHOOLS VERY DIFFERENT FROM THOSE AFFECTING SIMILAR PRIVATE SCHOOLS.

The first promoters of the Manual Training Schools were very emphatic in protesting that no trades, or special industries, were taught in them, and in urging on this ground the greater value of their methods educationally.

This position need not be controverted; but, when considering the relations of the public schools to industrial education, it is necessary to remember that these first "Manual Training Schools" were practically private institutions, with large tuition fees; that their pupils were, for the most part, able to devote the time and money requisite to acquiring a liberal education, professional or mechanical. The advocates of the addition of this feature of the manual training schools to the public school system follow the line of the originators of the private institutions in giving prominence to the fact that no special industries or trades are taught in them, only a general foundation for all mechanic employments. The value of this form of elementary training as a basis for future special training is conceded. It is, however, suggested that, owing to the different conditions affecting the pupils of the private schools and those of the public schools, there exists, in the latter case, the need of practically bridging over the gap between the manual training school and the workshop, or manufactory, which is to give paying employment to the graduate of the public manual training school. Consequently the protests by the directors of private manual training schools against trade schools, technical special schools, etc., are not pertinent when uttered by the promoters of public manual training schools.

THE PRACTICAL DIFFICULTY NOT YET SOLVED BY THE ADVOCATES OF THE NEW INDUSTRIAL TRAINING.

What is true in regard to the smaller class of boys who may graduate from the public manual training schools, is still more important in its application to the large majority of the boys who go out from the lower grade schools. If this much discussed question of Industrial Education in the public schools, is to be of any permanent practical benefit in training large numbers of school children into more or less skilful artisans, some feasible way of introducing them into the ranks of skilled laborers must be devised. No such way at present exists. This is a question of such practical importance that it cannot long be ignored. Objections to its discussion that may be urged by timid advocates of the new industrial education, for the reason that there are already difficulties enough to be met at the outset, must not be given too much weight; because, otherwise, the experiment must needs fail before it is fairly begun. As a chain is no stronger than any one of its connecting links, so much the more the links, by themselves alone, are but useless fragments. This is the present condition of the industrial education scheme so far as any connection between the children in the schools, and the workers in the various trades, is concerned. And this ugly factor of the problem must be fairly met and successfully solved ; before any permanent succeess can be achieved.

LOCAL INDUSTRIES.

This consideration also emphasizes the importance of so shaping the industrial training of schools in the various localities as to give to the pupils the best preparation for entering upon the local industries. As a practical question too much weight can hardly be given to this point, since the majority of school children are under the necessity of finding employment in the immediate vicinity of their homes. The chief concern of the public must be concentrated on those who form the large majority, and who are compelled by circumstances to remain attached to the soil, if not in the sense of the like class in mediæval times (for in this age the peaceable populations as well as the war reserves have been largely mobilized), still they are so to the extent that the local industries must be the main dependence of the majority of the inhabitants of the locality. How the connection between the industrial training in the schools and the industrial employment of the former pupils of these schools shall be effected, is the problem awaiting solution. Whether by private or public institutions is immaterial, if only the connection is established. This problem will vary in its phases with varying localities, and its solution must be undertaken in compliance with such existing conditions. It is plain that no hard and fast lines can be laid down in advance, and equally that no theories or prejudices should be suffered to thwart or impede its practical solution.

THE PUBLIC MAY NEED NEW DEVICES TO MEET THE NEW EXIGENCIES.

Public "Trade" schools and "Technical" schools may yet be found to be necessities in many localities; while the rapidly varying forms of industry arising from the multifarious discoveries, inventions, and novel applications of power may, doubtless must, necessitate novel forms of industrial training to meet the new contingencies.

The above paragraph had hardly been written before the startling statement, then just published in a leading journal,* fell under the observation of the writer, to the effect that in the European technical schools the development of American inventions was closely observed, and the students were carefully trained in the use of the latest American tools and machinery adapted to their trades; so that the trained European artisan, on landing here, was fully as familiar with American tools and methods as the practiced American journeyman. It will thus be seen that European competition is as aggressive in education, as in traffic. It is clear, if this progresses, that something far beyond the mere elementary knowledge of the names and uses of the simpler tools of the artisan will be requisite to fit our school boys for the higher ranks of skilled labor. This latest phase, it is true, applies rather to the "Manual Training Schools" proper, than to the lower grades of public schools; but whatever retards the front of the column delays the march, and, if not overcome, will gradually call a halt all along the line; and, in the end, effectually oppose all progress.

A REMARKABLE MOVEMENT IN ENGLAND.

In this connection the recent action in England in the formation of a "National Association for the Promotion of Technical Education" is noteworthy. A great meeting was held in London July 1, 1887, to organize this association. The Educational News of July 9 says of this, editorially:

> In the end of last week an educational gathering, likely to be memorable, took place in London, under the presidency of the Marquis of Hartington. Its object was the inauguration of organized measures for placing technical, commercial, and agricultural education on a systematic basis throughout the United Kingdom; and with such men as Sir Lyon Playfair, Mr. Mundella, Sir John Lubbock, and many more equally well-known leaders in all educational movements ready to give the new scheme the benefit, not merely of their names but of their means and of their active personal services, success may be regarded as a certainty. * * * The establishment of a net-work of technical schools, fitted to impart the exact education required by the industries of each locality, will be the beginning of a new era in educational history; and its influence in revolutionizing existing notions of what constitutes education is likely to be greater than the most sanguine anticipate.

Lord Hartington, in his inaugural address, calls attention to the deficiency of England in providing for technical education in comparison with other countries. He says:

> We had in this country attained to a great industrial and commercial supremacy in the world. * * * At the same time, concurrently with our attainment of the supremacy, wonderful scientific discoveries had been made, and, more and more,

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*See extracts from article in New York Tribune of April 3, 1887, in Appendix K.

science was being applied to the industrial occupations of the world. Other nations had been quick to perceive this, and they were striving, as far as they could, to make their position equal to ours, and to supply the want of material resources which we possessed by extending and developing, at an immense cost to the state and public funds, that scientific instruction which would enable their manufacturers and their workmen to compete successfully with ours. If we were passive in this matter—if we were indolent—it was conceivable not only that foreign nations would rival us, but they might also succeed to pass us, with a consequence of which it would be difficult for us to contemplate.

Mr. John Morley, in seconding the motion, spoke in the same strain:

The only match for the development of industry during the last fifty years was that of science. The most important branch of the legislative activity of the last fifty years had consisted in the great mass of legislation the object of which had been to regulate labor. The workshop and the factory of the future must be the great educating centres and schools. [Hear! hear!] We had to place our artisans in as good a position as those of other countries. [Hear! hear!] The technical college at Zurich far exceeded any similar institution in this country, and this fact, compared with the enormous wealth of England as compared with Switzerland, was not a creditable fact for this country. When the Germans took Strasburg they gave £700,000 to found a college for technical instruction, and many thousands a year for its maintenance. [Hear! hear!] England was not doing so much for its laboring classes as were other countries.

If in Great Britain, with their very efficient provisions for technical training, the leading statesmen, scientists, and political economists feel the need of earnest effort in order to keep abreast of the world's progress, the thoughtful minds among the leaders of public opinion in the United States may well give to this subject of elementary industrial and superior technical education serious consideration.

CHAPTER X.

INDUSTRIAL EDUCATION AN IMPENDING NECESSITY.

Since American Youth are practically prohibited from learning trades, while skilled foreign artisans are suffered to come freely to this country, certain alternatives present themselves for consideration—What it may become necessary for the people to do in the way of training skilled American workers, cannot as yet be determined—The Public may possibly be forced much farther in this direction than the most advanced advocates for public school industrial training now imagine—The City of Washington, owing to its peculiar relations to the Government, is a marked exception to the rule that the main industry of a locality should modify the form of industrial training in local schools—The forms of industry best adapted for the needs of colored children at the South and of the children of emigrants at the North—The recent exhibitions of school children's work—Dangers to the Republic from the materialistic drift of Manufacturers and Theorists — Horace Mann on the power of education to create wealth and to equalize its distribution—Co-operation versus competition—The chief purpose of the Common Schools is to breed good citizens of a Democratic Republic—This purpose must never be lost sight of—The changed conditions of manufactures make it more and more desirable that Art Knowledge and Skill should be generally diffused—The coming American worker should be a craftsman, an artist—Pressing as is this movement for Industrial Training it will be of little permanent benefit unless it leads to thorough artistic skill and develops a race of American Art workers.

WHITHER DRIFTING?

Everything in the events of the past few years tends to press upon the attention of the community, with ever-increasing earnestness, the practical questions of education.

If our youth are to be prevented from learning trades after they leave school, and if immigrant European artisans are to be so drilled, before leaving Europe, as to put them absolutely on a par with our native American workmen by doing away with the slight advantage the latter have hitherto had in their familiarity with American tools and methods, then, if the present forced exclusion of American youth from opportunities to learn the mechanical industries and trades in the workshops continues, the result must be, either, that in the near future all the skilled workers of the country will be imported foreign artisans, since no *American* recruits are permitted in the ranks of skilled labor, or, some practical plan must be devised by which the public, by some forms of instrumentality, shall secure for American youth such training in the mechanic arts, that they can go out from such schools or training shops as well equipped for their trades as are these foreign artisans.

The only other alternative would be the absolute exclusion of all foreign immigrants from our shores! The American people will soon be brought face to face with this problem — either the absolute exclusion of foreign workmen, or the education by the public, on a large scale, of American youth as skilled artisans.

While it is true that these last paragraphs are a digression from the particular topic to which this portion of the present chapter was to be exclusively given, they are, nevertheless, so closely connected with the subject of the public systems of education that they can only with difficulty be kept out of view in a consideration of the common schools of the people; for, if the need of providing some forms of additional technical training for the children going out from the public schools is becoming a question pressing for immediate answer, as the facts just recited seem to indicate, then a consideration of the whole subject of industrial education is not only pertinent to the question of the forms most suitable to the lower grade schools, which are here under consideration, but is an essential factor to be computed in any attempted solution of the problems.

It will be kept in mind by the reader, that no idea is here entertained of announcing any *ex cathedra* decisions in regard to these mooted questions; the purpose of this chapter being simply, an endeavor to so state these problems, as to clearly define and distinguish the various factors which compose them, and which need to be separately considered, and to offer suggestions concerning them.

The time for the announcement of any authoritative conclusions by anybody is of necessity indefinitely deferred, owing to the fact that most of the practical efforts made for the solution of those difficult problems are still in the experimental stage. Certain elementary facts have been settled, but the practical limits to be placed upon the conclusions to be drawn from these ascertained premises are by no means clearly defined.

The field that may need to be occupied, before these industrial educational problems are satisfactorily solved, broadens indefinitely under the light of the statements just recited. Whether it is as yet true that such training in American methods and machines is now at all generally given in the European training technical schools or not, it is certainly entirely within their power to give such special preparation; so that the possible results of such action ought by no means to be ignored as chimerical. It is, for this reason, desirable that the advocates of industrial training in public schools should not set themselves in advance in opposition to public "Technical" schools, or to "Trade" schools, since it grows more and more probable that some such facilities for bridging the gap between the school house and the workshop, must in some way be provided. As has been already stated, this very volume is largely a record of attempts in the past, on the part of individuals and corporate bodies, to provide facilities for such practical training.

The tendency is more and more for the public to undertake the responsibility of meeting public needs, since it has become better understood that only the resources of the public are equal to such undertakings; so that now, when a public necessity is recognized, it follows, almost as a matter of course, that sooner or later public action is taken. How far the public shall go in the matter of making provision for free public education was never so undetermined as it is to-day. The local answers to this question would vary with each community, but everywhere the tendency is the same—that is, to enlarge the curriculum and province of the public schools, and to broaden the educational domain of the people.

In view of the impending needs just referred to, and of the present tendency to widen the scope of public education, it is by no means certain that eventually public "Technical schools" and "Trade schools" may not be recognized as a public necessity.

Meantime, to return to our consideration of the importance of adapting the elementary industrial training in public schools to the local industries, in view of what has been said as to the importance of the influence of locality in determining the kind of industrial training to be given in the public schools, a description of the situation in the capital city of Washington will perhaps, paradoxical as it may at first seem, prove a fitting illustration.

THE CONDITIONS IN WASHINGTON PECULIAR.

Washington, as is well known, is in most respects an exceptional city, unlike any other in the United States, and markedly peculiar in its relations to the topic under consideration; for the reason that, owing to the so-called claims of "locality," there is offered no opportunity for the children who are born, or brought here, and educated in the public schools of the city, to ever hope to be employed in the only real business of the city! Washington being the capital city of the United States, and having no manufactures, no commerce, and no general wholesale mercantile business, is wholly given to the administrative and legislative work of the Nation; hence, its working population largely consists of the officials, clerks, and employés in the great Government Departments, Museums, etc., and of those connected with Congress. Now, the District of Columbia is but an infinitesimal part of this great country, and the justice of the claim having been assumed, that the workers here under Government should be appointed proportionately from the whole country, according to locality; it follows, that the number to be appointed from the city of Washington is too small to be taken into account as offering any reasonable prospect of future employment for the school children of the city. Therefore, in any plan for the industrial training of the school children of Washington, all those forms of industrial training specially adapted to fitting the pupil for employment in the Government service must be excluded.

Hence it results that the city is, as I have said, an exception; for in all other places it would seem wise to pay regard to the needs of the leading industries of the place in giving the children industrial training. In Washington, however, for the reasons just stated, the industries in which the children can hope to be employed are confined to those which relate to the housing, clothing, and feeding of the inhabitants. As nearly all furniture and materials for home decoration are brought here from other places, as is also ready-made clothing for men, there remains for boys little in the mechanical industries but the house building trades; and for girls, dress making, house caring, laundrying, and cooking. So that house carpentering and masonry for boys, and cooking classes for girls, would seem to be the direction that industrial training in Washington might most profitably take, if the object should be to be of most service to the largest number of children.

The large number of colored children in the schools of Washington, the most of whom, of necessity, depend entirely on the public schools for their education, furnishes an additional reason for the above suggestions as to the direction that may wisely be given to such forms of industrial training as can be taught in these schools. This element of school population is found, in greater or less relative proportion, throughout all the Southern States, and, in like manner, indicates the forms of industrial training which may be most readily and profitably introduced into the public schools of the South, because they can be adapted to the needs of the lower grade schools with very little additional cost; so that a beginning in practical industrial education in those communities can be made at once, leaving the manual training schools proper to be established in the cities when demanded.

In the lower grade schools the boys can be taught the use of farmers' and carpenters' tools, and the girls to sew, to do household work, and to cook. It has been sufficiently shown at Hampton and in many places in the North, particularly in the sewing classes in the Boston schools, in the cooking classes established by Mrs. Hemenway in Boston, and in the "Kitchen Garden" experiments by Miss Huntington in New York, that orderly elementary training in these various industries can be successfully given to boys and girls in classes, with very marked results in developing the powers of the children, who in many cases are thereby transformed into most effective little home missionaries of neatness and comfort.

The movements that have arisen in some places, leading to the giving of exhibitions of various articles made by public school children outside of school hours, and the attendance on such exhibitions, are striking indications of the extent of public interest in the industrial development of the children.

MATERIALISTIC TENDENCIES.

The attitude of the employing manufacturers towards their workmen seems, more and more, to show a tendency to regard them simply as mere machines, of interest only as they serve a purpose in the production, at the lowest possible cost, of the objects the employer desires to sell.*

Against this strong tendency of a materialistic utilitarian age, the philosophic statesman, the wise teacher, and the true patriot will strenuously oppose themselves; because the logical outcome of such movements, if they are successful, can only be the creation of two classes of citizens; the one a great proletariat class, living in comparative poverty and depending for employment on the other, which will be composed of a small class of enormously wealthy capitalists, such as the immense material development of the past half century has already begun to produce here. What this would mean for the United States can be best understood by a study of the Rome of the later emperors and the Russia of to-day, which two epochs of history strikingly illustrate the outcome of similar conditions.

Nearly fifty years ago Horace Mann, then fighting the battle of free common schools in Massachusetts, foresaw the dangers with which increasing wealth and unequal distribution menaced society. The dangers he then saw lurking incipiently in that enterprising commonwealth, have become evident to all, in the rapidly increasing perils which now threaten society throughout this rich Republic. Henry George in his treatise on Progress and Poverty has eloquently pictured the present conditions, but while he proposes an untried and problematical remedy which would almost necessitate a social revolution, before the dubious experiment could be tried, his far-seeing forerunner proposed a preventive as applicable now as then, and one which is in perfect accord with all the traditions of the Republic. Mr. Mann says, having premised that "Poverty is a public as well as private evil" which is not due to natural laws or conditions, but is the result of unequal distribution, the result of a false theory and unwise enactments:

> According to the European theory, men are divided into classes,—some to toil and earn, others to seize and enjoy. According to the Massachusetts theory, all are to have an equal chance for earning, and equal security in the enjoyment of what they earn. The latter tends to equality of conditions; the former to the grossest inequalities. * * *.

He fears that Massachusetts is becoming "Emulous of the European theory." What would he not now think of the whole country, if he could know of the present display and insane worship of wealth which pervades all classes? He says:

> With every generation, fortunes increase on the one hand, and some new privation is added to poverty on the other. We are verging towards those extremes of

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* See extracts from Helen Campbell's "Prisoners of Poverty." Appendix I.

> opulence and penury, each of which unhumanizes the human mind. A perpetual struggle for the bare necessaries of life without the ability to obtain them, makes men wolfish. Avarice, on the other hand, sees, in all the victims of misery around it, not objects for pity and sucoor, but only crude materials to be worked up into more money!

How true a protrayal of the mental attitude of those employers who have not hesitated to import the dregs of Europe in order to beat down the wages of their American workmen, and who, like the avaricious buyers of oriental rags after a pestilence, have imported a plague which threatens to destroy them! If Anarchy and Nihilism threaten monopolies, it is well to remember that it was the cruel greed of the monopolists seeking for pauper labor, which first led to the wholesale importations of anarchists and nihilists! As to a remedy for such dangerous inequalities Mr. Mann says:

> Now, surely, nothing but Universal Education can counterwork this tendency to the domination of capital and the servility of labor. If one class possesses all the wealth and the education, while the residue of society is ignorant and poor, it matters not by what name the relation between them may be called; the latter, in fact and in truth, will be the servile dependents and subjects of the former. But if education be equably diffused, it will draw property after it, by the strongest of all attractions; for such a thing never did happen, and never can happen, as that an intelligent and practical body of men should be permanently poor. Property and labor, in different classes, are essentially antagonistic; but property and labor in the same class, are essentially fraternal. * * Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men—the balance-wheel of the social machinery. * * It does better than disarm the poor of their hostility towards the rich; it prevents being poor. Agrarianism is the revenge of poverty against wealth. The wanton destruction of the property of others * * is only agrarianism run mad. Education prevents both the revenge and the madness.

Referring to the theory of many agitators that some "are poor *because* others are rich." He shows how this could only be true, if the wealth of the world were a fixed amount. He then shows how education creates new wealth out of the resources of nature.

> Beyond the power of diffusing old wealth, it has the prerogative of creating new. It is a thousand times more lucrative than fraud; and adds a thousand fold more to a nation's resources than the most successful conquests.

What this great philosophic educator has so eloquently set forth in regard to the value of the education given in the common schools of forty years ago, is vastly more applicable to the kind of education urged in the volumes of the present Report; because the training here urged is not only the general enlightenment of the mind, but is, in addition, a definite training of the creative and industrial faculties of the mind directed to production. In view of the present condition of the social organism in these United States, these arguments of Mr. Mann, if sound, appeal with tenfold weight to all who care for their country, to promote to the utmost of their power the spread of the new industrial art education throughout all the public schools and educational institutions in the land.

CO-OPERATION IN PLACE OF COMPETITION.

A few philanthropists, appalled at the pitilessly logical results of unrestrained competition, have long proposed to substitute co-operation as the ruling principle of the future. They point to New Lanark and to Guise, to Owens and Godin, in proof that their proposed remedy is no vain chimera of visionary theorists; but has been proved to be a practical method of solving satisfactorily, the knottiest problem which modern civilization propounds.

If an era of such co-operation, as Scotland and France have seen so brilliantly successful, should ever be successfully inaugurated in America, there would, at once, arise additional inducements for the promotion of industrial and artistic training in the common schools; for, unlike the present labor unions, which discriminate against individual excellence, the compensation of the co-operative worker depends directly upon his skill and industry. The best trained worker, the most skilful artisan, contributes his abilities to the common stock and receives a dividend in direct ratio to the value and sum of his contribution. Certainly as contrasted with the Anarchist, and the Nihilist, the Socialist and Land Theorist, who have thronged to us from Old World despotisms, the peaceful, prosperous, industrial co-operatives of Guise and New Lanark seem ideal citizens. That such experiments have succeeded is of good omen to Humanity.

The chief purpose of the free public common schools of the United States, is the training of the children into such men and women as shall be able to secure the perpetuation and prosperity of a free Republic; nor can any form of industrial education, however novel or however technical, be safely divorced from that paramount duty, nor can the introduction and support of such schools be urged or defended on any lower grounds.

THE SKILL OF INDIVIDUAL MECHANICS LESSENING.

Throughout the whole country, especially in the manufacturing States and in the vast farming regions of the Northwest, the changes in the forms of industry effected by the ever-increasing development of machinery, not only in all kinds of manufactures but in all agricultural employments, have greatly modified and are constantly diminishing the need for constructive skill on the part of the workers. So many of the materials of house-building, such as doors, sashes, flooring, etc., that were once made by the individual carpenter, are now made in factories, that the need for special skill in construction on the part of the house-carpenter is greatly lessened. It is the same with all the materials used by the plumber; and the like conditions affect most of the mechanical trades; so that it is rapidly coming to pass that the skill absolutely needed by any of these mechanics is little more than that of fitting and adjusting the several parts and objects turned out by the factories. Not only our American guns and watches, but every variety of machines, of vehicles, and even our very houses, are coming to be made of interchangeable parts. These changed conditions materially affect the character of technical education; the advanced student is to be taught the management and direction of machines, rather than the art of making things himself; the same influence is felt in the simpler industries, and, owing to the recent diminution of the demand for thorough knowledge and practical skill on the part of the workers, there has been found a difficulty in getting practical mechanics sufficiently well skilled to be able to serve as instructors in their given trades.

ARTISTIC TRAINING AND SKILL NOW NEEDED.

These changes in the character of the demand for skill cannot fail to affect, more or less, the details of the introduction of industrial training in the public schools; they point directly to the ever-increasing need for education in art; they urge, by the inevitable logic of events, the necessity of widening the opportunities for giving to all the schools thorough training in industrial art drawing, and for developing, so far as possible, artistic hand crafts; so that, as the products of machinery enable men to dispense with trained skill on the part of the workers in the industrial trades, they shall thereby be enabled to give more attention to the products of the arts which give gladness and beauty to life, which adorn the dwelling and the person.

As proofs accumulate that less and less skill is, in the future, to be requisite on the part of workers in many of the mechanic employments, by so much the more is it imperative that the coming race of workers shall be fitted for art work; that, as enforced leisure comes to the worker, because machines do the work he was trained to do, some other employment must be found for him in the future. This may readily be at his hand in the development of the artistic possibilities of the industry in which he has been trained, if only, he has himself been as thoroughly grounded in the elements of art, as it is quite possible to train the children in the public schools.

This need of adjustment to new conditions, rapidly pressing upon us, must be kept in mind by the advocates of industrial training; else the outcome of their efforts will end in disastrous disappointment. Mere mechanical training will not long prove a sufficient preparation for the work of the skilled artisan. May it not be a consciousness of this, intelligent or instinctive, that leads Professor Adler, on the one hand, and the advocates for mere book training, on the other, to urge the paramount importance of keeping only in view, in education, the development of the intellect, the giving the human being full possession of all his innate powers, rather than any specific skill of manipulation?

A SURVIVAL OF APPRENTICESHIP.

The assertion that in America apprenticeship is no longer known, has become a commonplace among writers on Industrial Education. The subject has been so generally considered only in connection with the larger towns and cities, that the statement has usually passed unquestioned: it was however, controverted in a very interesting paper read by Mr. Addison B. Burk, before the Philadelphia Social Science Association in 1882.* A suggestive sentence, in an essay on Apprenticeship, read before the same Association some years previously, by Mr. James S. Whitney, to the effect that the system of Apprenticeship arose in the fourteenth century as "a natural outgrowth of the social state" led him to the inference that similar social conditions might still be found in this country outside the cities and towns:

> Small villages, country cross roads and "corners" I thought might present favorable conditions, but they seemed at first hardly worth considering. I examined the census returns, however, and found that of the fifty million inhabitants of the United States, nine millions only reside in cities and towns of 20,000 inhabitants and over. Forty-one millions have their homes in the smaller towns and villages, and in the country.

Mr. Burk, in an analysis of the census of 1870 and of 1880, finds that of the sixteen millions of workers, four millions are employed in manufacturing, mechanical, and mining industries and of these "only a little more than one million live in cities of over 20,000 inhabitants, where the social conditions are assumed to be more or less unfavorable to the apprenticeship system." He finds that "two and three-fourths millions are living where the conditions are more or less favorable to the old system under which the apprentice was the only help to his master, was bound to him by indentures for a term of years, and lived in the same house with him." He therefore determined to investigate for himself and made personal visits of inquiry to several places within moderate distance of Philadelphia, villages and towns in Pennsylvania and the neighboring State of Delaware, going among the master mechanics and workmen.

He found a system of practical apprenticeship variously modified existing in several places. His inference is that all over the country in rural districts there are large numbers of American boys who are learning their trades in the old fashioned way, which is far better than not learning them at all. He sums up the result of his investigations both personal and statistical, as follows:

> We have seen that the apprenticeship system by written indentures is practically obsolete in our large cities, but that it still survives in a greater or less degree of

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* Apprenticeship as it was and is, with some suggestions about Industrial Schools for the Training of Workmen. Read at a meeting of the Association, June 1st, 1882, by Addison B. Burk. Published by the Philadelphia Social Science Association, 728 Locust st., Philadelphia. Pp. 27.

perfection in the smaller cities, towns, villages, etc. We have also seen that the number of persons engaged in the mechanical arts in the smaller cities, towns and villages greatly exceeds the number similarly employed in large cities, and finally we have found that in the large cities boys are still taught trades, but under a variety of methods, some of which turn out a large proportion of half skilled workmen.

Mr. Burk is far from agreeing with those who lament the decadence of apprenticeship; which he characterizes as "utterly unsuited to our present social state," and a wasteful method of learning a trade; since it is only by chance that the workmen, who are the only teachers, possess the slightest ability to teach.

As secretary of that admirable technical industrial training school The Spring Garden Institute in Philadelphia, he has watched the results of systematic instruction and heartily indorses the mechanical handiwork schools. He urges the adoption, through all grades of the public schools of a progressive course of Industrial Training. For those already graduated he would everywhere establish night schools of Industrial Drawing, for, he says, "there is no better preparation for any kind of mechanical work than a knowledge of drawing and ability to practice it." He adds "this is not a matter of theory so much as of observation." He supports his statements by illustrative instances of pupils and graduates of the Institute.

This paper by thus directing attention to the preponderance of the non-urban population of the United States, suggests forcibly the propriety of considering how definite industrial instruction can best be adapted to ungraded schools outside of cities. Doubtless the children, like those of the early New England schools, are in less need of some kinds of industrial information than are city children, but a knowledge of drawing will be found equally useful, and can readily be taught.

In the rapidly growing demand for Industrial Education throughout the country the graduates of the few Manual Training Schools now established, may find attractive employment as Teachers of the new methods.

But we are now to study the progress of the discussion, to note the practical steps of the new educational movement, and listen to the evidence of practical educators in the recital of experiments made in their several communities.

CHAPTER XI.

INDUSTRIAL EDUCATION IN PUBLIC SCHOOLS—THE BEGINNING OF THE MOVEMENT.

Retrospective — Reference to early movements in Boston, New Bedford, and Philadelphia, as recorded in Part I of this Report — The introduction of drawing incites to this movement — Rapidity with which a change of methods may be accomplished in the public schools, especially in the graded schools, in which the pupils change with each succeeding year — The status of the new educational movements shown by extracts from letters and from reports — Fuller details given in Appendix I — Reference to Report of the Commissioner of Education for 1884–'85 — A volume would be needed to adequately treat the recent and contemporary movements for Industrial Education — No attempt is here made to give an xhaustive statement, or to arrange the material with regard to due proportion and relative importance — The object sought is to give in detail at least one typical school of each class — Details of the history and of the methods of the several experiments given with minuteness for practical use — Reasons for beginning with an account of the experiment in Washington, D. C.

RETROSPECTIVE SUMMARY PRELIMINARY TO THE ACCOUNTS OF PRESENT EXPERIMENTS IN INDUSTRIAL EDUCATION IN THE U. S.

Before proceeding to a consideration of the statements in the following chapters, which show the progress and present status of the experiment of introducing some forms of Industrial Education in Public Schools in various cities and towns—both as given in recent correspondence early in 1887, and as compiled from the latest official publications—it may be of interest to recall the first steps in this new departure.

By reference to the first volume of the present Report, where appear early indications of the beginnings of this movement, in the report to the Boston School Committee, made in 1870 by the Special Committee on Industrial Schools, it is seen that the introduction of sewing in all the girls' schools, then just begun in the lower class of grammar schools, was the one industry proposed. (See Part I, pp. 217–219.)

The addition of "cutting and fitting" in the two highest grades of grammar schools, and the adding of "a department for practical instruction" in the Girls' High School and in the Normal School, in which "book-keeping, designing, telegraphing, drawing on wood and stone, and needlework in its various branches shall be taught as elective studies," was, however, urged; this was in effect a proposition to give in the public schools for girls similar training to that given by the Cooper Union in New York.

The report of Superintendent Harrington, of New Bedford, for 1882 (see pp. 363–366, Part I of this Report), includes an admirable résumé of the experiments in industrial training in various schools in Massachusetts to that date, while in the extracts from the report of Hon. Edward T. Steel, president of the Philadelphia Board of Public Education, for 1880 (see Part I, pp. 377–383), may be traced the beginnings of the movement in that city, which, later, resulted in the establishment both of an industrial school and of a manual training school as city public schools.

It will be observed that these further movements were everywhere incited by the introduction of industrial art drawing in the schools.

FACILITIES FOR CHANGES IN METHODS AFFORDED BY GRADED SCHOOLS.

In view of the fact that, during the first half of the present century, sewing had been successfully taught in many common schools in various places throughout the country, objections to its introduction in the modern schools seem, at first sight, strange; yet, on reflection, it is seen that such instances but serve to show how transitory is tradition, where generations "tread each other down" so rapidly as do the ever-shifting occupants of modern school rooms. Given, as often happens with each passing year, a new teacher and new pupils, and you have ready a "*tabula rasa*" for the educational reformer. These conditions, most favorable for the introduction of new ideas and the trying of novel experiments, demand also a wise conservatism on the part of the educators, lest, in the excitement and confusion of changing "old lamps for new," Aladdin's magic lamp of power, that compelled the Genii, be not incontinently given in exchange for some worthless candlestick of glittering tin.

SOURCES RELIED ON FOR STATEMENTS IN SUCCEEDING CHAPTERS.

The present development of the new movements in various localities are shown in the extracts from letters and from late official reports given in this chapter. The rise of this movement for industrial education, the growth of public opinion in regard to it, and the circumstances surrounding its origin in the several communities can be more fully traced in the comprehensive extracts from contemporary accounts, and from official reports, public addresses and discussions, which are given in Appendix L.

As these movements are still in the experimental stage, and as many of the questions relating to them, arising simultaneously in widely separated communities, are far from settled, it has been thought advisable thus to collect, especially in the Appendix, such materials bearing upon these subjects as are available, and as may serve to show the growth of opinion among various communities, with the arguments advanced both by the friends and the opponents of the new movements.

As already stated in the previous pages, there are several distinct undertakings embodied in the movement known as that for promoting Industrial Education. Material relating to each of these divisions of the subject will be found in Appendix I.

In the Annual Report of the Commissioner of Education for 1884–'85 (issued May, 1887) will be found a summary statement of the experiments made, up to that time, in industrial training in city schools. (See Report for 1884–'85, pages CCVI–CCXVII.) Recent correspondence with the gentlemen furnishing that information enables the record to be further brought down in this "Special Report" to February, 1887. The references in these letters to former statements refer to those just mentioned as in the Annual Report; in several instances these statements have been so amended by their authors as to bring them to date; in others they are simply referred to.

Besides these direct replies, the latest "reports" and schedules of the industrial work actually given in schools are here included, for their practical usefulness to those planning the introduction of similar work.

Extracts from reports, discussions, publications, etc., showing the rise and progress of the new movement, are given in Appendix I.

Copious and varied as is the material collected and given in this text, and in Appendix I, there has been no attempt to make the treatment of this topic exhaustive. To do this would require a separate volume, and, as has been already repeatedly stated, "Manual Training" and the cognate topics relating to Industrial Education have been, as it were, interpolated in this Report; in which only such industrial training as relates to training in Art, with reference to its direct application to Industry was originally contemplated. The subjects are, however, so interlinked, drawing being common to them all, that the remarkable movement in favor of carrying industrial training through all phases and grades of education, which at present challenges public attention, cannot be here ignored.

HOW THE SUBJECTS ARE TREATED.

I have endeavored to give such an account of the attempts to introduce the new studies in public schools, made in different large and small places in various parts of the country, as would give a true idea of the methods adopted and the results obtained; but, for the reasons just stated, there has been no attempt to include all such undertakings; and, doubtless, some experiments of great interest may have been omitted, not having fallen under my notice.

As will be readily seen, there has been no attempt in these descriptions to preserve any rule of proportion; as much space sometimes being given to a single mechanics' night school as to an account of the situation in a large city, the only purpose being to set each example, in its essential details, as accurately and fully as possible before the reader.

Had circumstances permitted, a special volume would have been given to this movement; but, since time and opportunity for this were both wanting, I can only hope that what has been done may serve the purpose of affording opportunity for the study of the several kinds of experiments, and for an impartial consideration of the arguments and objections advanced concerning these innovations by both the advocates and opponents of the striking movements which characterize this new era in education.

Still, incomplete as this compilation may prove, the writer can but cherish the hope that something of value has been here brought together; so that, however far from a full and satisfactory setting forth of the situation this initial attempt may be, it will at least accomplish what so many similar preliminary efforts on the part of this Bureau have already effected; that is, that it may call forth such full returns from those engaged in this movement as will serve to render more complete and satisfactory a later effort to recite its history.

Although, technically considered, less has as yet been accomplished towards making a beginning of the new movement in industrial education in the schools of Washington City than has been done in many small towns throughout the country, yet, since drawing has been well established, and so a sound basis for further advance is secured, the little that has as yet been done may be fairly held to be an earnest of the future introduction of some forms of industrial training in all the public schools of the District of Columbia.

It seems proper, therefore, to begin this summary of actual experiments throughout the country with a brief statement of what has been here attempted, and of the action contemplated for the school year 1887–'88.

CHAPTER XII.

INDUSTRIAL EDUCATION IN PUBLIC SCHOOLS—THE EXPERIMENT IN WASHINGTON, D. C.

Reference to the account in Part I of the introduction of drawing in Washington Schools—Mr. Koyl initiates manual training in the High School in 1885–'86—Statement by Principal Paul, of the High School—Need of thoroughly trained teachers for manual training classes—Why Washington schools should be models of excellence—Contemplated increase of High School pupils for 1887–'88—Reasons why an entrance examination is proper for high schools—Evidence on this point given by leading educators and school officials of New Bedford, Mass.—Excellence of Washington public schools attained by years of intelligent and unremitting effort—The present experiment of admission to the High School a dubious one—Manual training class in the Colored High School—Great interest shown by Superintendent Powell in beginning industrial training in the three primary grades—Permanent success of drawing in all the schools, under Mrs. Fuller's direction—Practical use of drawing by Normal School pupils in teaching—As yet no industrial training for girls introduced—Through co-operation by Commissioner Webb with Superintendent Powell the introduction of industrial education on a large scale decided on for 1887–'88—Details of the plan given.

INDUSTRIAL WORK SUPPLEMENTAL TO DRAWING LONG PLANNED.

An account of the introduction of Industrial Art Drawing in the schools of Washington in 1874, due to the earnest well-directed efforts of Superintendent J. Ormond Wilson, will be found in Part I of this Report. (See pages 323–335.) When that account was written Superintendent Wilson was planning the early introduction of additional industrial work in the schools, including a manual training school for boys similar to the one in Baltimore, with provision in the schools for other forms of industrial education suitable for girls.

Under Mr. Wilson's successor, Superintendent William B. Powell, a small beginning has now been made in this direction, a room to accommodate a class of twelve boys having, at the suggestion of Mr. Koyl, the professor of Physics in the High School, been fitted up as a carpenter shop in the basement of the High School in 1885–'86.

This manual training division is now (1886–'87) in charge of Mr. Wesson, a graduate of the Worcester County Free Institute of Industrial Science, who shows excellent results in the skill of the pupils in wood-working. The interest taken by the boys in this work during the year was very noticeable. Any absences in the classes were eagerly taken advantage of by boys anxious for the opportunity of working; so that the benches were always occupied and the class always numbered twelve.

THE EXPERIMENT BEGUN IN THE HIGH SCHOOL.

I am indebted to the courtesy of Principal Paul, of the High School, for the following statement:

WASHINGTON HIGH SCHOOL, *June* 11, 1887.

DEAR SIR: In compliance with your request, I take pleasure in submitting herewith a brief statement of the plan for manual training now pursued in this school, with a few words as to its introduction and development.

In March, 1886, Mr. Koyl, the teacher of Physics, volunteering to instruct a class of boys in carpentry, a few sets of tools were procured, rough benches made, and, although the lessons had to be given, for the most part, after school hours, very good progress was made, and the experiment in a small way proved a success.

Encouraged by this beginning, the school teachers decided to secure a special teacher for this branch of instruction, and at the opening of the next year (September, 1886) Mr. W. G. Wesson, a graduate of the Worcester Free Institute, was appointed to the position of teacher of manual training. Mr. Wesson, on beginning his work, had the boys of last year's class make a number of benches, and secured from the school contingent fund about four hundred dollars' worth of tools.* With this outfit a programme of work was laid out which would give one hour a week to two hundred and forty boys. The work attempted is set forth in the following paragraph, clipped from an account of a reporter's visit to the shop, which appeared in the "Evening Star," December 5:

THE CURRICULUM.

The following short report upon the character and scope of the school, which was recently sent to a member of the school board by Mr. Koyl, will be found of interest:

"The instruction begins with a hammer exercise, to teach both the object of employing the momentum of the hammer and the proper method of using it in special cases; followed by the study of the handsaw, including explanation of the differences in sizes and shapes of saws and of saw-teeth, with the reason for these differences; exercises in the use of the saw, and in cutting lumber at definite angles—always at right angles unless otherwise specified. Next comes the discussion of braces and bits, with drill in boring perpendicularly to the surface and without tearing the under side of the wood. Then follow planes and extended practice in their use, and the chisels and gouges. Having become proficient in the knowledge of the construction of these tools, and incidentally of such small ones as gauges, awls, etc., and proficient in their use, they are given definite problems for solution. The diagram of an open mortise-and-tenon joint is put upon the board, and each student is required to cut, first the tenon, and then the mortise, and to make first a driving, and then a sliding fit. Other joints follow this in order, the ordinary mortise and tenon, the blind mortise and tenon, the dovetail, and all the joints that are of value for instruction, until the student can perform any kind of bench work in wood with accuracy and rapidity. This method has been adopted as the most beneficial to the student in giving him correct ideas of form, and in educating him to that skill of eye and hand which it is our main object to impart."

For next year it is proposed to add metal-working, and possibly extend the work in wood so as to include turning.

In this connection it may be proper to state that it is our aim to have drawing and the work in the shop go hand in hand, and as our drawing department has ample facilities, and the work done there is quite advanced, this aim will be easy of accomplishment. Within the last two years moulding in clay and the making of card-board forms and models have been introduced, and it is thought that this will make the connection with the work in the shop the more feasible.

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* The cost of the tools alone has since been found to have been only $150.—EDITOR.

Very respectfully,

E. A. PAUL,
Principal.

Col. I. EDWARDS CLARKE,
U. S. Bureau of Education.

Owing, in part at least, to unforeseen provisions in the appropriation bill as finally passed by Congress, changes occurred, which for a time threatened to check the immediate development of manual training in connection with the High School, where, under one year of Mr. Wesson's direction, it had been so successfully installed.

When Mr. Wesson, who graduated with great distinction from Worcester, was led to come to Washington to take charge of these classes it seemed probable that a manual training school, somewhat after the model of the one in Baltimore, would soon be established in a building of its own, equipped with all needed machinery for wood and metal working; whether it was to be a separate high school, or simply to receive classes sent from the high and upper grade grammar schools, was undetermined. It was this prospect which led to his acceptance for the first year of an inadequate salary. By a not unusual occurrence in appropriation bills, the founding of this Manual Training School seemed to be indefinitely postponed, with the result that the services of Mr. Wesson have been secured by the Baltimore and Ohio Railroad Company for their shops near Baltimore, and are lost to the Washington schools; a loss much to be regretted by all interested in the successful introduction and development here of industrial education. It is not easy to get a thoroughly trained scientific expert who also possesses the rare gifts of the teacher.

COMPETENT DIRECTION AND SUPERVISION ESSENTIAL IN A CITY SYSTEM.

There is now apparently a disposition to put as much of manual training as is feasible in the higher grade grammar schools, and to divide among them the funds available for such work. The success of any educational experiment is so dependent upon the teacher, that to have one efficient fully equipped instructor like young Mr. Wesson at the head of manual training in the city would accomplish much more for the success of this movement than to employ in each grammar school an ordinary carpenter to teach the boys; because one such master, thoroughly and scientifically trained, would teach the teachers, and set up a high standard, by which all the work in this department would inevitably be judged. "A stream can rise no higher than its source," and if the school officials of Washington, or of any other city, really desire to introduce in their schools the best forms of industrial education, there is but one way in which it can be done, and that is to secure a thoroughly competent instructor to have charge and supervision of this department in all the schools. This is not easily effected, for men with such qualifications are in constant demand in other occupations, as is shown in the case of Mr. Wesson.

WHY THE BEST METHODS SHOULD BE ADOPTED IN WASHINGTON.

It has long been felt that this city, under the exclusive control of Congress, should, in all municipal improvements and facilities, and especially in its school system, furnish a model for all other towns and cities in the country. Here experiments can be most economically and conveniently tried for the whole country; here proposed improvements can be tested and introduced. It was with this idea that the parks, streets, pavements, and schools have been planned and improved. The school system has been the growth of years of thought and devotion; and though its full development, as planned, had not been reached, what had been done had admittedly been well done. The High School, with a remarkable corps of teachers, among them several graduates from Johns Hopkins University, ranks with any in the country. A change of policy as to admission seems to threaten to overwhelm it with numbers, and thus to inevitably lower its grade. This danger, it is said, has had an influence in leading to the resignation of several of the teachers, who, like Mr. Wesson, are disappointed in their reasonable expectations, and who are also, like him, called to other fields by higher salaries.

It is, on the other hand, affirmed that the increase in the number of applicants for admission to the High School arises only from the natural increase in the number of graduates from the grammar schools, three additional grammar schools having been recently established, whose graduates swell the numbers "entitled to attend the High School," and that there is no intention of lowering the standard of the High School and no exceptional increase in the numbers applying for admission.

ADMISSIONS TO THE HIGH SCHOOL.

The difference seems to be that now, every graduate of an eighth grade grammar school is held, *ipso facto*, to be "entitled to attend the High School;" whereas, up to last year, it was held that only such grammar school graduates as passed satisfactorily the entrance examination set by the teachers of the High School, were considered as "entitled to attend." These examinations, which many of the pupils failed each year to pass, are no longer held. It was at one time suggested that a ninth grade grammar school be organized, to which all eighth grade pupils might go in course, so that the standard of the High School could be kept up, or even raised, without any denial of further school privileges to any eighth grade grammar school graduate. This proposition has not, however, received the approval of the authorities.

Formerly all the High School pupils having passed the same examinations were on an equality of preparation for advanced studies; but when this uniform test is abolished, and the certificate of the teacher of the grammar school substituted, it is evident that there may be as many varieties of standard for admission to the High School as there are individual grammar school teachers who pass their own pupils. It would be difficult to imagine a surer method for lowering the standard of a school than thus to substitute, for a class of scholars proved to be equally well prepared, a larger number of untested pupils, among similar classes of whom nearly one-third had, in previous years, been unable to pass the required examinations.

Certainly a high class school is of the greatest advantage to any community, for it affords opportunity for superior education to those who cannot go to distant schools and colleges to obtain it; and they are not true friends of such pupils, eager for knowledge, of whom there are some in every American community however humble or remote it may chance to be, who urge that it is no part of the public duty to offer such home advantages to all. The noble words of the late President Felton, quoted on pages CXXV–'VI of Part I, should be read on this topic.

THE SERVICE HIGH SCHOOLS CAN RENDER TO THE COMMUNITY.

In this connection, and in consideration of the complaints that are often urged, that this, that, and the other ought not to be taught in the public High School; some going so far as to say that only the common English studies, suitable for common poor working people, should be taught, others inveighing against the Classics, others against the Modern Languages, others against Mathematics, against Music, against Drawing—for each of these are opposed—and recently against Industrial Training; or, on the contrary, at times many, united by a passing wave of fashion, are found urging some one particular study at the cost of all others; while a large number have always opposed High Schools with arguments unworthy, indeed, of citizens of an American Republic, but very much in vogue with some of the self-styled "superior classes;" it is, perhaps, worth while to consider the matter a little more in detail, in the interest of the very desirable movement for high class industrial training, as well as of the High Shools as they have developed.

If, in a large city like Washington, there are a few youth who desire to devote themselves to intellectual pursuits, to fit themselves for the professions, and to do this need to learn Latin and Greek, it is well that the High School can give them this needed instruction; but it is by no means desirable, even if it were feasible, that all the pupils should be forced, or induced, to study the Classics. If some are likely to need a knowledge of French, or German, it is well that in the High School they can study these languages; it is equally needless that all the pupils, or many of them, should be permitted to fritter away the time which they need to give them a mastery of their own language in order to acquire only a smattering of a foreign tongue. In like manner, it is by no means certain that all High School boys should take manual training. It is clear that in so large a city there are many to whom the advanced technical training to be had in a first-class manual training school, such as Washington ought to have, would be of the greatest practical value, and the direct utility to them, would be so soon demonstrated that the whole plan of Industrial Education would be strengthened in the eyes of the people.

The object to be striven for is to make it possible for each and every pupil to get, in the High School, such training as will be of most value to the given youth in his proposed life work.

Before the doors of the High School the stream of pupils should diverge into the separate channels which are specially adapted to their several careers. Here the public education, before common to all, differentiates. The public is now to endeavor to give to each one that which is specially needed.

This is a question of economics as well as of wisdom, and the need of such discrimination is far greater in large cities than in smaller places, where the pupils are more likely to pursue similar callings.

The city High School should be able to command a corps of the ablest teachers in each branch, and these should not be overwhelmed by numbers, but should have the pupils who most need and desire the special instruction. On this plan the Washington High School was founded and developed.

If all facilities are to be open to all applicants without discrimination, not only will the time of many of the pupils be worse than wasted, but the enormously increased expense will inevitably lead to a sudden cutting off of all these opportunities.

It is resolved into the question whether a High School, as the apex of the city school system, shall offer a great feast to a promiscuous throng, where some get much, some nothing, and most, little that is satisfactory; or an orderly table, where each guest is served according to his needs.

The pupil who desires to be best equipped for the life of the skilled artisan is fully as much concerned in this matter, as the pupil who desires to be thoroughly grounded in Greek, as a foundation for after study and work.

It is the High School, rightly organized and used, which is to justify to the public its expenditure for all the schools; for a system has a claim to be judged by its best results, and to turn grammar school graduates into the leading and most useful members of the community as they go on to take their places in the world, which must be the case when each has had the special elementary training for his work which can there be given, will accomplish this result for all classes of citizens.

The merchant, the manufacturer, the builder, the lawyer, the clergyman, the teacher, the contractor, the architect, the engineer, can then, each and all, point back to the High School, in which they were thoroughly grounded in the special elementary knowledge needed to enable them to comprehend the principles underlying their various employments. What the High School has, heretofore, done for the college boy and for the boy desiring to enter mercantile life, it is now designed shall be done by the Manual Training High Schools, for all those desiring to enter the industrial vocations.

It is the glory of the Republic that it opens all doors of advancement and offers all its honors for all its citizens. Surely, then, on no pretext should the doors of knowledge be shut in the faces of any. But experience has taught that the acquisition of knowledge must be progressive and logical; and that to admit pupils to higher schools before they are thoroughly prepared to undertake such advanced studies is the most wasteful of all educational extravagance.

It is of interest, in this connection, to know the result of a similar experiment as tried in another city.

HISTORY OF THE NEW BEDFORD EXPERIMENT.

In New Bedford, Mass., in concession to the argument that the high school was but another grade in advance, and that all graduates of the next lower grade school ought, therefore, to be admitted without question, the school authorities ordered them so admitted. The unfortunate result of this action is stated in the report of Mr. John Eldridge, jr., chairman of the High School Committee, as follows:*

> In my visits to the school early this year, I noticed on the part of many pupils, in all the grades, an indifference to study, and a disregard of the rules of discipline, that surprised me.
>
> Inquiry revealed the fact that there was in the school quite a number of pupils who, perhaps, ought never to have been admitted; certainly they were not qualified to pursue the course of study prescribed. What seemed, at first glance, indifference, proved in reality to be inability to comprehend and grasp the subject matter of their several studies. They possessed but limited powers of application; and, unable properly to prepare their lessons, they took but little interest in the recitations.

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* Annual Report of the School Committee of the city of New Bedford, together with the Superintendent's Annual Report, for the year 1886. New Bedford: Mercury Publishing Company, city printers. 1887. Pp. 96. (See pp. 14–16.)

Why had such pupils been admitted to the school? It was through a modification of the conditions of admission enacted some years since, whereby the rule prevailing in the grammar schools, by which the pupils of the several grades were advanced each year "in mass," was applied to candidates for the high school, and the entire fifth grade of the grammar schools had been annually admitted without condition or question, except in cases of extreme unworthiness.

I cannot but think the basis of admission a mistake. It may be proper so far as the primary and grammar departments are concerned, and, in that connection, I understand, works well. But the conditions are radically different in the one case and the other. When pupils are to enter the high school, and undertake the higher branches of education, which make up its curriculum, it seems to me that some adequate preparation, some positive qualifications, some degree of mental fitness, should be required.

The committee have taken this view of the matter, and voted that, hereafter, the modification which had been in operation should be rescinded.

Another, and a still worse, result of this management was, that this apparent indifference on the part of the pupils had proved contagious, and had infected quite a number who, under other circumstances, amid other surroundings, would have been fair or even good scholars. It may be asked, Why was such a state of affairs allowed to exist? I reply that the teachers were utterly helpless.

No penalty, or next to none, attached to any failure in the daily work or occasional examinations. A belief, based upon actual experience and precedent, was universal among the pupils, that they could drift along, doing almost nothing, and, advancing year after year with their classes, finally graduate with as tangible proofs of good scholarship as those possessed by the pupils who had conscientiously, enthusiastically, and successfully completed the course.

Was this right? Again the committee, after careful consideration, decided that it was not. They accordingly voted that, hereafter, a certain amount of correct work, in daily recitation and occasional unannounced examinations, would be required to secure promotion and a diploma at the end of the course.

The former requisite of a rigid entrance examination for the High School had long before been discarded; in its stead the principals of the grammar schools were required to keep a list of the standing of each scholar, as shown by the result of a written examination at end of each term, and to submit to the High School Committee lists of their pupils, arranged in three classes; the first to contain the names of those unqualifiedly fit for the High School: the second, a list of those who it was thought had better be advanced despite some slight disqualifications; the third, the names of those unqualifiedly unfit for advancement. In addition, the committee and city school superintendent held annually an oral examination of each of these classes, and according to the average result of the two kinds of examinations were chosen the names recommended for admission.

SUPERINTENDENT HARRINGTON'S STATEMENT.

On this subject Superintendent Harrington says:

But at length this substitute was called in question. * * * In opposition to this discrimination [by the teachers against pupils who for any reasons were held disqualified] it was argued that no defects of intellect, energy, or temper should influence school authorities to bar out a child from any school for which, in regular progress, he is a candidate. Every parent has a moral and legal claim that his child, gifted or ungifted, shall have a fair chance at the existing opportunities to acquire a complete education. If he neglects or misuses them, the worst is his own. Why not apply the same rule of *promotion in mass* which is so successful in reference to the lower grades? On what ground is a great gulf supposed to exist between a grammar school and the High school, so that a formidable ordeal must be undergone before it can be crossed? Are not the studies of the curriculum uniformly progressive from the elementary work of the lowest primary grade to the graduating class in the High school, thirteen annual removes in advance? Are not these studies imposed on the pupils throughout the course, one after another, on the common basis of maturity sufficient to attack them intelligently? Is not the division of the grade into several departments—primary, grammar, high—actually an arrangement purely for convenience of administration?

Here was an argument with a basis of positive truth, and it seemed worth the while to defer to it. So the examinations were thenceforth abolished, and all the candidates admitted without question, except in cases of extreme unworthiness.

The result of this course of procedure has been clearly depicted in the Report on the High school. I will not repeat the tale. It is painful, but the experiment has been a wholesome one. It has settled a question that might otherwise have risen into perplexing prominence from time to time.

THE PHILOSOPHICAL ARGUMENT.

For myself, I have uniformly felt that there is truly a gulf between the grammar school and the High school, such as is found in no other connection. There are three recognized stages of mental development, as is well known—the "perceptive," the "conceptive," and the "reasoning." These supervene very gradually one upon another in the normal order of development, so that there is really no period in a child's progress to maturity at which a marked change occurs in the characteristics of his mental action. And this is as true of his passage from the conceptive to the reasoning stage, as from the perceptive to the conceptive. The youth who enter the high school in September possess pretty much the same powers as when they graduate from the grammar school in June.

But the methods of study in the High School are so different from those prevailing in the grammar schools as to define quite distinctly the passage of the mind from the conceptive to the reasoning stage. The work of the High School presupposes the attainment of mature capacity and makes demands accordingly, and it is idle for those who cannot comply with its demands to undertake its work. As the chairman of the High School Committee has reasoned, some adequate preparation, some positive qualifications, some degree of mental fitness, should be required. These three classes of minds, the essentially weak, the constitutionally void of interest in what may be termed distinctively "book-learning," and the doggedly averse to intellectual labor, are out of place in such a school. It is supremely foolish to insist on an abstract right in the face of manifest disadvantage. Not only are such youth gaining nothing from their school privileges, but they are correspondingly losing precious time, during which they might be fitting themselves for some practical occupation.

It is well, as I have said, that a trial has been made of both ways of solving the problem to such an extent as to exemplify which is the right, and make the method finally adopted permanent.

The result of a similar experiment in Washington will be worth the attention of all interested in securing for the children of the people the best possible education.

OPPORTUNITIES HERETOFORE AFFORDED BY THE WASHINGTON HIGH SCHOOL.

It seemed, when a serious movement was made to introduce manual training in the city schools, that the system of public free education in Washington below the grade of the college (and a future city college like that of New York City was the dream of some) was very complete, since the grammar schools gave an admirable English education for those unwilling or unable to spend more years in school, while the optional courses of the High School offered unusual opportunities for selection; fitting, as they did, either for entrance to any classical college or giving the basis of a thorough scientific education, with the modern languages, and so fitting for the scientific colleges; while they offered also a thorough training for business, or in the higher branches of an English education, and a fitting for the Normal School. When, since industrial art drawing was thoroughly taught in all grades, this addition of further industrial education was planned with a completeness which should include kindergarten training in the primaries, and manual training for boys and girls in the highest grades, with a view always both to the educational value as well as to the practical utility of the new studies, there seemed little wanting to the completeness of the Washington schools, or in the opportunities offered by them to all. They would be indeed ideal "common schools," offering to the child of the humblest citizen the keys of knowledge which open all the portals of life, and giving to the child of the richest and most powerful every advantage of preliminary education.

These advantages have not been easily won. Ignorance and conservatism allied in opposition to every advance. The introduction of music, the introduction of drawing, the establishment of the Normal school, the founding of the High school, each of these important steps cost a severe struggle.

THREATENING DANGERS FROM SPECIOUS CHANGES.

To largely increase at once the number of students in the High School by reducing the standard of admission on the specious plea of giving its advantages to larger numbers, while forced to let a most valuable instructor of manual training go by reason of inability to pay a reasonable salary, and to lose a corps of trained teachers from the school, called to other parts with better pay, seems a most hazardous experiment. This matter of salary is, however, fixed by Congress in the appropriation bill, and is not under control of the Commissioners. To raise the standard of admission to the higher has heretofore been thought the surest way of elevating the character of the lower schools. If the High School is simply to be crowded with grammar school pupils—to be, in fact, made simply a ninth grade grammar school to which eighth grade pupils go as a matter of course, instead of, as heretofore, gaining admittance by giving proof of special fitness and desire for higher training—its arduously won reputation will be speedily lost, and the grammar schools not improved. As such a condition of things in regard to the High School would jeopardize this whole movement for industrial education, which has seemed to be so promising and to have the hearty support of the school authorities of the District, it has not seemed out of place to refer to the situation.

Manual training has got foothold in this country by reason almost solely of the high character of the pioneer schools; that of the Massachusetts Institute of Technology and the Saint Louis school attached to the Washington University. This fact is significant, and should be kept in mind by all who seek to introduce it elsewhere. "Good wine needs no bush."

MANUAL TRAINING IN THE COLORED HIGH SCHOOL.

After the shop had been put in the white High School, Professor Cardoza, the principal of the colored High School, applied for similar facilities for his boys; and, at the beginning of the school year 1886–'87, benches and tools to accommodate six pupils were put in a basement room of the "Miner School" building, in charge of a young graduate of Hampton. Classes of boys are sent from the different schools, each pupil coming once a week for an hour; in this way a large number of colored boys have had each a few lessons in the use of the ordinary tools of the carpenter; at present the result, as shown in the articles made by the boys, is not indicative of any great proficiency.

Superintendent Powell has taken great interest in putting the beginning of industrial training in the three primary grades of the public schools, which has been successfully done by adapting from kindergarten methods the exercises of "weaving," "folding," etc., alternating with object lessons.

DRAWING IN THE SCHOOLS A SUCCESS.

Drawing, under the efficient direction of Mrs. S. E. Fuller, retains its place in all the higher grades. In the Normal School it is of interest to see the use made of it by the young pupil teachers in the practice schools, where its value to the teacher, in the facility it affords of illustration and as a means of awakening and retaining the interest of the young children, is very apparent. No steps have yet been taken for introducing any form of industrial training in the girls' schools, though the desirableness of having both sewing and cooking taught in these schools is admitted by some at least of the school authorities. Allusion has already been made to the exceptional conditions in Washington, which suggest the forms of industrial training in the public schools that promise the most direct utility.

District Commissioner Webb, who gives much attention to the schools of the city, which are placed by his fellow Commissioners under his special supervision, shows much interest in the development of industrial training.

PROPOSED DEVELOPMENT OF INDUSTRIAL EDUCATION IN THE SCHOOLS DURING 1887-'88.

I am indebted to the courtesy of Superintendent Powell for the gratifying announcement that, since the close of the school year 1886-'87, satisfactory arrangements have been concluded by Commissioner Webb and himself which promise for the ensuing year a very decided development of industrial education in the schools of Washington. The departure of Mr. Wesson and of several of the other excellent teachers of the High School was regretted by the authorities, but the cause of their going was one beyond control, since, as stated above, they were offered larger salaries elsewhere than the Washington school authorities are allowed by the terms of the last appropriation bill to pay.

Mr. Wesson is to be succeeded by Mr. Chamberlain, who is also a recent graduate of the Worcester school, and is to be on the faculty of the High School, as was his predecessor; in addition, he is to have supervision of all the manual training in the city schools. He is to have four assistants, who are also graduates of the Worcester school; so that the logical, thorough educational system introduced by Mr. Wesson is to be continued by these young gentlemen, who have the advantage of having been trained in the same institution and by the same methods.

A carefully arranged series of progressive exercises in manual training is a feature of the greatest importance, educationally. The ideal of manual training is not secured, or even approached, when some illiterate, though perhaps ingenious, carpenter has been engaged to show the boys how to handle a saw or plane, while at the same time he familiarizes them with bad grammar and a vicious pronunciation.

It requires an intelligent, disciplined teacher to get the best results out of manual training, which is a very different thing from the old trade apprentice training, just as much as it requires one qualified to teach to instruct in any other branch of school studies.

Fortunately Superintendent Powell thoroughly understands the importance of securing skilled teachers of manual training instead of employing mechanics unused to teaching. He would, in like manner, in introducing other forms of industrial education, seek to secure teachers equally fitted to instruct in their specialties.

A large building, which can be readily adapted to the proposed uses, has been secured near the High School. This is to be at once fitted up to accommodate a cooking school for the girls, a wood-working shop for the boys, and a metal-working shop, fitted with lathes and forges, and with steam power for the lathes, etc. Thirty-six boys can be taught here at once, and classes both from the High School and from grammar schools will follow each other each hour of the school day. The cooking school will accommodate a class of fifteen girls each hour.

A building has also been secured on Capitol Hill to accommodate twelve boys in class at woodwork and fifteen girls in class in cooking; while in the Jefferson School building, in South Washington, arrangements will be made for twelve boys in class in woodwork. As five classes can be taught each day in each of these schools, which are so situated as to be accessible to pupils living in different parts of the city, it is evident that a very large number of boys and girls in the High School and grammar schools can get at least an hour a week of industrial training, and that the experiment is to be tried here in Washington on a large scale and under very favorable conditions.

It is to be hoped that the authorities of the colored schools of the city and District will see to it that no motives of race prejudice are suffered to prevent their pupils from receiving the most skilful teaching.

They will miss most of the educational value of manual training if they are only to be taught to make things by an ignorant "rule of thumb" carpenter, and, for this reason, it would seem the part of wisdom to obtain a trained white teacher, if they cannot yet secure such a colored teacher, who has had the requisite thorough training, such as is given in the Boston, Worcester, or Saint Louis Manual Training Schools.

In further evidence of the importance of this training it is worthy of note that the Board of Trustees of the Slater fund, of which board ex-President Hayes is president and Chief Justice Waite is vice-president, are so well convinced that it is needed by the colored people of the South, that they refuse to aid any school that does not provide industrial instruction.

ANNOUNCEMENT OF THE SUDDEN DEATH OF REV. HENRY F. HARRINGTON, SUPERINTENDENT OF SCHOOLS OF NEW BEDFORD, MASS.

So much space has been given in this chapter to the account of the New Bedford High School, and the reports of Superintendent Harington have been also so freely quoted in the preceding volume of this Report, that it seems proper to record here the sad fact that, as these pages are passing through the press, the announcement of the sudden death of Mr. Harrington, while absent on his summer vacation, is received. He died at Keene, N. H., September 19, 1887. As this life-long educator had passed the biblical boundary of life, a life in his case spent in useful activities, his death, though a positive loss to the community in which he lived as well as to the country at large, can hardly be called "untimely," as has certainly seemed that of some of the distinguished educators whose loss during the past few years the country has from time to time been called to deplore. This death is, however, a positive loss to the educational interests of the country. He was an early and stalwart champion in the struggle for the introduction in the public schools of drawing and of the other forms of industrial training.

No educationist has been more receptive of new ideas, none more impartial or outspoken in giving the results of the educational experiments undertaken under his supervision, frankly admitting failures as readily as recording success.

This venerable educator, gifted with the enthusiasm of perennial youth, must long be missed and can but be sincerely mourned. Amidst the mass of educational reports annually poured forth by town, city, and State officials, few were of equal value, and none were more suggestive or more interesting than were those written by the wide-awake superintendent of the New Bedford schools. The educational literature of the country can ill afford this loss. His experiences were unreservedly stated, and were, therefore, of the highest value to others; for this uncommon man had not only the rare "courage of his convictions," but the much rarer courage that enabled him to acknowledge his defeats. If, sometimes, he may have seemed too ready to entertain new ideas and to adopt new methods, it was, on the other hand, certain that the new methods would have every opportunity for development, and that the final verdict would be judicial; that the kindly judge would "nothing extenuate and nought set down in malice."

Having no acquaintance with him other then through his printed reports, it was with the greatest surprise that I read the announcement of his age. It seemed impossible that this vigorous, aggressive, enthusiastic experimenter could have been what the world calls "old." Would that others could learn his secret of conserving through the years the zeal, enthusiasm, and unselfish devotion of ingenuous youth.

CHAPTER XIII.

EXPERIMENTS IN SOME NEW ENGLAND STATES.

Experiments in Massachusetts — Boston Manual Training School opened in 1884 — Note from Superintendent Seaver — Extracts from the Reports of Superintendent Seaver — Difficulties considered — School rooms limit the new study — A speciat Manual Training School, fully equipped, recommended — Proofs of growth of approving public sentiment indicated — Girls as well as boys are to he considered in plans for Industrial Education — Schedule of the course of lessons in carpentry given by Mr. George Smith in the Boston Manual Training School — Extracts from Report of Committee on Manual Training School — Statistics of attendance — Attendance of girls on the school kitchen — Various cooking schools attended by girls from public schools — A bill of fare of a dinner cooked by pupils — The North Bennett Street Industrial School — General Francis A. Walker reads report of the managers — Pupils sent from public schools to the industrial classes of this institution — Results of experiments in New Bedford, Mass. — Sewing in the Schools — Manual training taught in the Truant School in 1885 — Superintendent Harrington's evidence as to the practical value of drawing — His belief that the adoption of some forms of Manual Training in public schools is inevitable — Industrial Education in the schools of Springfield — Superintendent Stone, in Report of 1882, gives testimony as to the value of the education of the common schools — He then refers to the changed conditions in the relations of young people to labor — He insists on the right of *all* children to school advantages — Treats with deserved scorn the flippant talk of any American child being "educated above his sphere" — Who shall presume in advance to limit and bound his career? — Remarks on Technical Education and Manual Training — Recommends Free Evening Drawing Schools — School Committee's report on Sewing — Interesting Report of School Committee for 1886 on Industrial Education — Miss E. L. Fay's paper on Manual Training read at Chicago, July, 1887 — The city of Worcester — Mr. W. M. Perry, Director of Drawing in city schools — Superintendent Marble, in report of 1884, commends the drawing in the city schools, and discourses suggestively concerning Industrial Education — Extracts from Report for 1885, in opposition to what the Superintendent considers extreme advocacy of Manual Training — Newport, R. I. — New Haven, Conn. — Brief statement of movement begun in 1883 — Note from Mr. Camp, Principal of the Dwight School — Extracts from 1886 report by Superintendent Samuel T. Dutton, showing great activity in Industrial Education and in the introduction of Manual Training.

MASSACHUSETTS, CITY OF BOSTON.

In Boston, where the introduction of Industrial Art Drawing in public schools began, there has been, from the first, much interest in the movement for giving industrial training in the schools. The Manual Training School, an outcome from the Whittling School and the classes in carpentry in the Dwight School, was opened in

1884. In his annual report for 1885 (extracts from which are given later) Superintendent Seaver stated that some two hundred boys from ten different grammar schools attended the lessons in carpentry two hours a week. He declares the result of the experiment to be satisfactory. He expresses the opinion, however, that training of this kind practicable in school rooms is limited to "work at a bench with hand tools." It will be observed that this Boston school simply gives training in woodworking, and is very limited in its scope as compared with the Baltimore and Toledo "manual training" schools.

In response to a request for later information, Superintendent Seaver writes:

BOSTON PUBLIC SCHOOLS,
Superintendent's Office, February 7, 1887.

DEAR SIR: I am unable to add anything of interest on manual training in this city at the present time. The experiment continues to give encouraging results; but the time-table of exercises is not free from certain difficulties which will have to be solved before the working under it will be perfectly smooth.

My hope always has been, and still is, that Boston may establish a manual training school with a full course of instruction, like that of Saint Louis or of Chicago; but there have as yet been taken no definite steps looking towards that end.

Respectfully, yours,

EDWIN P. SEAVER.

To Col. I. EDWARDS CLARKE.
U. S. Bureau of Education.

EVOLUTION OF MANUAL TRAINING IN BOSTON SCHOOLS.

The progress of the discussion and movement in Boston, from 1883 to the present time, may be traced in the extracts from the official reports, etc., given in Appendix P. In the extracts from the Superintendent's report for 1885,* and in the report of the "Committee on Manual Training School" for 1886, which here follow, it will be seen that various forms of industrial training for both boys and girls have been considered, and that many of them have been successfully tried. In this report, in considering the topic of "Manual Training," Superintendent Seaver says:

The experiment in manual training for boys has made interesting progress. Two hundred boys, from ten different grammar schools,† have been under instruction in carpentry, two hours a week since September. Most of them were beginners at that time, but a few were members of the classes formed last April. The boys were selected by the masters of the grammar schools, no boy being taken who was not fourteen years old, and who had not the expressed permission of his parents, to take the instruction. This limit as to age is well suited to the usual size and strength of boys, and has the additional advantage of avoiding some possible legal difficulties.

A course of lessons drawn up at the beginning of the year by the teacher, Mr. Smith (see Appendix B), has been followed with some approach to uniformity, but here, as everywhere else, widely different degrees of native aptitude, as well as of attention to instruction, show themselves among the boys. There are some whose "fingers are all thumbs," and there are others who make square work and good joints almost from the beginning. A very little observation among the boys is enough to show that a clear mind generally accompanies the skilful hand, that manual skill has its mental, as well as its physical side, and that manual training is really a means of mental training.

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*School Document No. 4, 1885, Fifth Annual Report of the Superintendent of Public Schools of the City of Boston, March, 1885. Pp. 109. See pages 38–43.

† The quota of the Prince School being not quite full, a few pupils were taken from the Horace Mann School for the Deaf.

The interest in their work shown by the boys is very lively, such as I have seldom seen surpassed in any other kind of school work. Many boys come to the shop afternoons an hour before the appointed time, and get the teacher's permission to work three hours instead of two. Some, seeing the gas-fixtures provided for use on dark days, and, fancying that instruction was going to be given in the evening, begged to be allowed to come and work then, as well as in the daytime. But there were others, of course, whose ardor cooled as the novelty wore off, and the truth began to dawn upon them, that manual labor was, after all, work, and not play. Still, the number of these last was not large enough to disturb the generally favorable impression the classes produced.

THE EXPERIMENT A SUCCESS.

The experiment has already gone far enough to prove that work of this kind can be joined to the ordinary grammar-school work with good effect. It enlisted the sympathy, encouragement, and support of the masters from the beginning; and to this cause the success already achieved is largely due. So long as there are nearly three thousand boys in the grammar schools fourteen, fifteen, or more years old, it will be desirable to give them good opportunities to discover and improve their mechanical aptitudes, and thus to gain a mental discipline which, otherwise, they would miss. But where is the time for a new branch of instruction? The answer has been given that manual training, being a kind of physical exercise, is a relief from other school work, and therefore a boy will do all his regular studies, and the shop work, too, in the time usually given to the former. This answer can be defended to some extent by an appeal to experience. Still, it is taking rather high ground, to say that manual training can be added to the branches of instruction now pursued without diminishing the latter. I would rather take a more moderate position, and pay due regard to the average possibilities. It would be wiser to make room for a new branch of instruction by dropping some of the old. For example, if the question were between physics, as commonly taught out of a book, on the one hand, and instruction in carpentry on the other, I should unhesitatingly prefer the latter. Indeed, by means of the latter we might be able to get some real instruction in the former. The time given to carpentry would not be wholly a loss to the other studies, for some of them as drawing, and the geometrical part of arithmetic, would be aided.

The manual training practicable in school rooms seems to be limited to those kinds of work which can be done at a bench with hand tools. Within this limit the way now seems clear to spread instruction among the schools as far as may be thought desirable. While I am more than gratified with the progress thus far made, I, nevertheless, deem it important to remember that a fully equipped manual training school will find its proper place in the school system not in the grammar schools, but above them, and side by side with the high school; and I trust that the means may be found ultimately for carrying out the full plan.

Two years ago only two examples of the sort of school I then recommended could be pointed out, and neither of these was a public school. One was the School in Mechanic Arts of the Massachusetts Institute of Technology in this city—the first school of its kind in America—and the other was the Manual Training School in Saint Louis, in which the course of combined work and study came very near to what would be desirable in a public school of the same kind.

Since that time public sentiment has become more pronounced in favor of industrial education. Other schools have been established, and still others are proposed. In Baltimore we have the first, and as yet, so far as I am informed, the only instance of a fully equipped manual training school supported by public taxation. That school went into operation January 15, 1884, with an appropriation of $7,000 for that year; but the cost of the school, which had 150 pupils, exceeded the appropriation by about $4,000. For 1885 the appropriation asked for is $15,000; but it is expected that the number of pupils will be increased.

The Baltimore school, being a free public school, with a course of work and study essentially like that of the Saint Louis school, is in all respects an example of the kind of school I have thought, and still think, it desirable for Boston ultimately to have.

Meanwhile there is one forward step in our present experiment that may easily be taken at once; and that is the opening of evening classes. The room in the basement of the Latin School is well provided with gas-fixtures, so that work might easily be carried on in the evening. If a class should be formed for two or three evenings a week, and be carried on through the whole year, its members would receive two or three times as much instruction as the present day classes do, and the results would be proportionately larger and more satisfactory. I doubt not this suggestion will receive favorable consideration, for the only additional cost would be the wages of a teacher and a small outlay for lumber.

COOKING AND HOUSEWORK.

But why provide for the industrial education of boys and not of girls as well? If carpentry may be taught to the boys, why not cooking to the girls? What instruction beyond the "three R's" is more likely to promote the happiness of girls in after life than instruction in those useful arts which make homes comfortable and happy? The answer that many will make is that home is the place where all such instruction should be given. This answer was given when it was first proposed to introduce sewing into the schools. A writer in the North American Review has recently pointed out that all such instruction was given in the New England homes of fifty years ago, and he has stated his belief that we have only to shorten our school terms from ten months to five to cause it to be given once more in the homes of to-day. This suggestion apparently rests on the assumption that modern school work has by its growth crowded out home instruction in the domestic arts; but the truth would rather seem to be that the growing neglect of the domestic arts has caused a void which schooling has come in to occupy. There are thousands of homes where this neglect springs from indifference, and thousands more where it springs from ignorance. Short schooling would not cure the evil here, for indifference and ignorance would continue. It would be better to prolong the schooling, if by so doing we might, through good instruction, create greater interest in the homely, but useful, arts now too much neglected.

If, then, public-spirited people offer gratuitously to the pupils of a girls' school good facilities for learning how to cook, why not allow the girls, with the permission of their parents, to enjoy those facilities? Or if the principal of a girls' school desires to annex a kitchen to his school, and to superintend the instruction given to some of his pupils by a competent cook, why not allow it to be done at public expense? The cost would be trifling, but the benefit to the girls and to many families would be very great. It would have a tendency to multiply the number of happy homes, which in turn would tend to the moral elevation of the community. The London School Board has established cooking schools at various points in that city, and with very gratifying results. Can we do better than to follow the example of London, in so far, at least, as conditions here resemble conditions there?

LESSONS IN CARPENTRY GIVEN IN THE BOSTON MANUAL TRAINING SCHOOL BY GEORGE SMITH, TEACHER OF CARPENTRY, 1884-'85.*

Lesson I.—A board 4 feet long and 12 inches wide, of undressed lumber. By the use of chalk and line strike off two or three spaces three-quarters of an inch apart for the use of splitting saw. With the rule and pencil mark off five or six three-quarter inch spaces, and square across with the try-square, for the use of cutting-off saw. After using these tools what remains of the board is to be cut into pieces of the right dimensions for a box 14 inches long, 6 inches wide, and 4 inches deep. The purpose of this lesson is to teach the use of the splitting and cutting-off saws.

Lesson II.—This lesson brings into use the different bench planes. First, remove the iron from the frame, grind it on the grindstone if necessary, whet it on the oil-stone, and then adjust for use. Taking the stock cut for a box in the last lesson, plane one side and one edge of the board square; then gauge with the marking-gauge, and plane to 4 inches in width, squaring ends with the butt-plane, and nail together.

Lesson III.—Get out stock 2 inches wide and seven-eighths of an inch thick, and put together a box 12 inches long and 6 inches wide, by mitring the ends or cutting them at an angle of 45 degrees.

Lesson IV.—A mitre-box. Stock 18 inches long. Bottom planed to 4 inches wide. Take out of wind by use of straight-edge. Sides 5 inches wide, and nailed to the bottom. Cut with a saw across the two sides, at an angle of 45 degrees, to the right and to the left.

Lesson V.—Saw and plane some stock 3 inches wide, and put together a box by cutting the ends in the mitre-box. This lesson is to test the mitre-box. If correct, the ends of the box will come together square.

Lesson VI.—Stock 2 inches wide, with a rabbet cut for glass and the two edges beaded, mitred, and dowelled together for a picture-frame. This affords another test of the mitre-box.

Lesson VII.—Take two pieces of board, each 6 inches long and 5 inches wide, planed and squared, and put together by a common dovetail joint.

Lesson VIII.—Take two pieces of board, each 6 inches long and 5 inches wide, and put them together by blind dovetailing.

Lesson IX.—A small cabinet, 9 inches square, halved together, with two drawers, put together by blind dovetailing. Cross bar between the two drawers dovetailed in. Made of black walnut or of white wood.

Lesson X.—A chest 2 feet long, 12 inches wide, and 12 inches deep, dovetailed and glued together, the bottom fitted inside. Base 3 inches wide, chamfered on the upper edge and mitred together at the corners. Trimming around the top beaded, 2 inches wide, and mitred together at the corners.

Lesson XI.—Make a mortise and tenon, and fit them together. This is a preparation for the next lesson.

Lesson XII.—Cover for the chest (Lesson X). Put together with mortise and tenon, with a panel in the centre.

Lesson XIII.—A writing-desk, 12 inches long, 9 inches wide, 3 inches deep at the back, and 1½ inches deep in front, with compartments for pen and ink. Cover put on with hinges.

Lesson XIV.—Stock 3 inches wide, 2 inches thick, and 6 inches long, framed together with a key tenon.

Lesson XV.—Table, with a drawer. Top 3 feet long, and 1 foot 8 inches wide, made of two boards glued together. Frame put together with mortise, tenon, and draw-bore. Cross pieces 6 inches wide. Legs square and tapering.

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* Appendix B in Fifth Annual Report of Superintendent Seaver. Boston, Mass., 1883. See pages 90-92.

List of tools at each bench in the Manual Training School.

Splitting-saw, cutting-off saw, fore-plane, short jointer, smoothing-plane, butt-hammer, mallet, rule, try-square, level, marking-gauge, mortise-gauge, five auger-bits and a brace, five firmer-chisels, screw-driver, counter-sink, brad-awl, scratch-awl, nail-set, chalk-line and reel, oil-stone, oil-can, bench-brush.

A few tools in addition to those at the benches are furnished, when needed, to individuals.

REPORT.*

The Manual Training School finished its second school year in June.

Ten classes in carpentry (each class receiving one lesson per week) have been at work all the school year.

The ten classes above mentioned attended the school as follows:

Monday	A. M.,	Lawrence School		20 boys.
	P. M.,	Brimmer School		20
Tuesday	A. M.,	Dwight School		20
	P. M.,	Phillips School		20
Wednesday	A. M.,	Lowell School		15
	P. M.,	Sherwin School		20
Thursday	A. M.,	Dudley School		19
	P. M.,	Quincy School		20
Friday	A. M.,	Dearborn School		14
	P. M.,	Prince	12	
		Horace Mann	8	
				20
				188

* * * * * * *

Total number of boys who have left the school during the year, 46.

BOSTON SCHOOL KITCHEN NO. 1.

This school began the first Monday in November, 1885, and closed June 18, 1886.

Ten classes, of 15 girls each (each class receiving one lesson per week), have received 29 lessons.

The ten classes were supplied by the following schools:

Winthrop School	52	girls = 4 classes.
Horace Mann School	8	
Franklin School	30	2
Everett School	30	2
Hyde School	30	2
	.150	10

The school opened this year October 4, 1886, with the same number of pupils, from the same schools as above mentioned.

Over 700 persons, from nearly all parts of the country, visited this school during the year. The grateful acknowledgments of the committee are due to Mrs. Hemenway, who kindly volunteered to pay again this year the expenses of the school because of the reduction by the city council of our appropriations. With our limited means we have been able to establish but one new school this year—a cooking school in South Boston. Last year at this time we promised ourselves to establish a school for carpentry in Roxbury as well, but we had not the money.

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* School Document No. 15—1886. Annual Report of the Committee on Manual Training School. Boston: Rockwell & Churchill, city printers, No. 39 Arch street. 1886.

The cooking school in South Boston, or Boston School Kitchen No. 2, is located on the first floor of the Drake Primary School. The kitchen is larger than those hitherto in use. We can accommodate 20 girls per lesson, or 400 per week. The Andrew, Gaston, Norcross, and Shurtleff Schools will easily furnish this number. We have made arrangements to this effect.

One hundred and thirty-four girls—70 from the Hancock School, 56 from the Wells School, and 8 from the Bowdoin School—attend the private School of Cookery on North Bennett street, under the superintendence of your committee.

Thus all the girls in the schools of the city proper and South Boston have the opportunity to receive a course of twenty lessons in cookery.

These schools deserve great consideration from the committee. They are certainly popular with the people. Their usefulness reaches at once the home circle and compels appreciation. The pupils are proud to be helpful at home. Their parents are much pleased with their welcome assistance.

We have found masters, teachers, parents, and pupils all heartily interested in this work. In the beginning there were teachers who had misgivings lest the manual work would interfere with the proper school work. We find no such teachers now. All the manual workers hold good rank in their schools.

Petitions for schools of cookery have come to us from Dorchester, Roxbury, East Boston. In Dorchester we are offered a school kitchen, fully equipped, if the school committee will carry it on.

Good food, properly cooked, is of great value in every home. Domestic economy is a virtue. Good food adds much to the contentment and happiness of this life. Good cookery places good food within the reach of all classes at the minimum expense.

We append the following to illustrate the work done in School Kitchen No. 1. It is merely the bill of fare of one of the many dinners served in that school kitchen:

Bill of fare of dinner served at Boston School Kitchen No. 1, June, 1886.

Potato Soup. Croûtons.
Baked Fish with Parsley Sauce.
Mashed Potatoes.
Shoulder of Mutton, Boned and Stuffed.
Macaroni with White Sauce.
Vegetable Salad with Boiled Dressing.
Hot Rolls.
Apple Snow.
Crisped Crackers. Coffee.

Ten persons served. Cost, $1.91; 19$\frac{1}{10}$ cents each.

It is natural that all men and women should labor. It is through their labor that benefit accrues to the city, State, and nation.

The object of all public education is the development of the ability and character of each boy and girl. All good ability and character is profit to the community. Therefore the thorough development of the faculties for good of every boy and girl is most desirable. Manual training impresses upon every pupil the necessity of thoroughness, for all good work, all good results. A habit, a plan of work, insensibly grows on every pupil, and goes with them into all school work. It is to be expected it will go with them, after their studies in our schools are ended, into their work in the world. There they will find a school, too, under much harsher rules.

Your committee unanimously recommend that in September next a school of carpentry be established in Roxbury, and schools of cookery in Roxbury, Charlestown, North End, East Boston, and Dorchester.

JAMES S. MURPHY,
Chairman.

THE NORTH BENNET STREET INDUSTRIAL SCHOOL.

Occasion has frequently arisen in the course of this Report for reference to the interrelation often existing between the managers of private, or organized, benevolent and educational institutions and the public schools officials, in their joint efforts to promote the educational interests of the public. There is at present in Boston a notable example of such an alliance in the use made by the school authorities of the facilities afforded for the industrial training of public school children by the North Bennet Street Industrial School, an institution which for some years has been carried on by an association of benevolent ladies. As this school is thereby, in part, to be reckoned among the public educational instrumentalities of the city, the following statement of the classes sent from the public schools is taken from the managers' report, read by General Francis A. Walker, president of the Massachusetts Institute of Technology, and member of the Boston School Board, at a meeting held in the school building, February 21, 1887.

ATTENDANCE OF PUBLIC SCHOOL PUPILS.

By permission of the School Committee of Boston, classes have been sent for two years from the public schools to the different departments in this building. They come from 10 to 12 o'clock in the morning, and from 2 to 4 in the afternoon, during five days in the week. The whole number of pupils so sent is 614 weekly. Of these 116 are in the carpenter's shop, 118 in the printing office, 105 in the shoe shop. One hundred and sixteen are instructed in clay modelling, 20 of these last being taught at the Horace Mann School for the Deaf, where a devoted teacher goes to her younger pupils to spare them the exposure of crossing the city. It should here be said that there are pupils from the school for the deaf in most of the departments of this school, and that some of them show marked ability.

In the cooking school are now 159 pupils from the public schools, and at the end of a course of 20 lessons as many more will receive the same instruction, so that more than 300 girls will have had here a course of lessons in cooking and housework during this school year.

An official account of this school and its work and methods, as well as the managers' report, from which the above is taken (for both of which I am indebted to the courtesy of Miss Emily P. Rudd, superintendent of the school), will be found in Chapter XVII of this volume, together with an account of "The Industrial School for Girls," by Miss Mary C. Cobb, superintendent. This last is a somewhat similar institution, situated in the city of Milwaukee, Wis.

The detailed description of the methods adopted and the results attained in these practical experiments of direct industrial training, seem of sufficient educational importance, as studies for those interested in the Introduction of Industrial Education in the public schools, to warrant their insertion.

NEW BEDFORD, MASSACHUSETTS.

In the movement for the introduction of drawing in the public schools of the State the school authorities of the city of New Bedford actively co-operated from the beginning. The history of their experiments will be found at length in Part I of this Report. (See pages 352–366.) It will be there seen that in his report for 1882, Mr. Harrington, the enthusiastic and successful superintendent of the city schools, treats at length the topic of industrial training, and urges its adoption both in the boys' and girls' schools. He predicts, however, that the experiment, if adopted at all by the board, will begin with the introduction of sewing in girls' schools.

The following reports by the chairman of the committee on sewing, in the annual reports of the School Committee for the years 1885 and 1886,* show that the prediction by the Superintendent has been fulfilled:

"SEWING" IN 1885.

It is with feelings almost exultant that we realize that one-half at least of the children in our schools are being taught one thing which will obtain them a livelihood when other resources fail.

We are informed by those who dispense the work in some of the charitable institutions in our city, to women who avail themselves of those sources for means to eke out their support, that many sew so poorly, that they can be given only those articles to make for which the smallest sums are paid. And so their inability to do good work prevents their availing themselves of the aid which is proffered them.

There are in our schools, under the care of efficient and faithful sewing teachers, 1,126 girls, and we have been assured by many mothers that already good results are felt in their homes by the ready use of the needle in hitherto unskilled fingers.

There have been finished during the time allotted to sewing—one hour a week—some two thousand pieces of work. That much of the work was well done is proved by the fact that fifty pieces, some from each school, which were sent to the Bristol County Agricultural Society, received premiums amounting in the whole to $19.50.

We have no suggestions of change to advise, for we feel that all concerned in the sewing are doing excellent work.

Respectfully submitted.

B. B. WINSLOW,
Chairman.

SEWING IN 1886.

There has been no deviation during the past year from the regular line of improvement, which, from its start, the sewing department has followed.

So little machinery is needed for its workings, and so quietly do the three teachers who have it in charge carry out its requirements, that but for the annual exhibition, we should scarcely be conscious that such a course of instruction was being given in the school curriculum.

About 1,500 girls, having individual attention from the teachers during forty hours a year in the school room, have brought to a state of completion some four thousand articles.

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*Annual Report of the School Committee of the City of New Bedford, together with the Superintendent's Annual Report for the year 1885, Pp. 108, New Bedford, 1886. Similar report for the year 1886, Pp. 96.

They have been trained meanwhile in habits of care and self-reliance in a direction which it would have been impossible for any of them to receive at home, even under the most favorable circumstances. The knowledge and skill thus attained will not only enable them to perform good work themselves, but will make them better judges of the labors of those whom they may have to employ hereafter.

We have every reason to congratulate ourselves in having secured teachers who enter so heartily into the work, and who so faithfully execute the plans of your committee.

Respectfully submitted.

B. B. WINSLOW,
Chairman.

In the report of the Committee on the Truant School for 1885, it appears that an attempt was made to secure a teacher for that school who should be competent not only to act as principal, but to instruct in the use of carpenter's tools. This failing, a competent mechanic was engaged to give weekly lessons with some success. The cost of tools, etc., was met by an appropriation from the Howland fund, a fund given by a wealthy lady for supplementing the school facilities in various ways not included under the regular city appropriation for schools.

In his report for 1885 Superintendent Harrington says that "Drawing has proved to be, literally, the most productive study, in a practical point of view, of any of the studies of our schools, if the numbers who have been aided to obtain occupation through its means be a fair criterion of results." A concise history of the introduction and development of this study in the city schools is given preliminary to a proposal to introduce in the schools full sets of the new models for Form Study and Drawing, published by the Prang Educational Company, which are highly approved by the superintendent. Increased attention has been given during the year to object drawing. Upon the general topic of Industrial Education in schools Superintendent Harrington says:

HAND TRAINING.

Ever since I gave the subject of hand training in public schools an exhaustive examination, I have had but one conviction, viz., that its general adoption was as inevitable as fate. And I have welcomed the rapid progress towards this consummation, because I have felt that it is desirable not only on economic grounds, but because it is perfectly consistent with the theoretic basis of public school instruction. It is a process of educating the mind through the medium of the hand.

It still encounters embittered opposition. But little more than a sixth-month ago, at a meeting of the superintendents of New England, several of the leading minds among them,—leaders they are as well among the educators of the whole Republic,—concentrated their powers to decry and repress it. They plied its supporters with arguments, sneers, sarcasm, and all the weapons they could bring to bear out of their rhetorical armories; but they failed of their purpose, except with the prejudiced few; for their arguments were weak, and ridicule is rarely effective except when it has a strong backing of truth.

And now a fresh support has manifested itself for this beneficent innovation. The youth who have been trained in experimental schools of the kind begin to apply for employment as mechanics, and the master workmen who have given them places say that they exhibit a marked superiority of aptness and skill over those who have had no training of the kind. This practical indorsement is giving the subject a vigorous impulse in advance.

Meanwhile voluntary schools, which combine hand training with the old-fashioned book training, have multiplied in all directions, and now at length, in several localities, hand training has been made a systematic adjunct of the work of the public schools.

I recur to the subject at this time only to hint that the School Committee of New Bedford are not accustomed to be behindhand in adopting expedient suggestions for the improvement of their schools, and I trust that in this connection we shall not be laggards. I feel quite sure that the great majority of the board have the same interest in the subject as myself, and I look forward with confidence to a movement which, at some time in the near future, shall invest a portion of the income of the Howland fund in measures for an introduction of this notable addition to the advantages of the public schools

The Superintendent, in his report for 1886, records the fact that the Prang drawing models have been secured for the schools, while Mr. Chas. T. Bonney, chairman of the drawing committee, reports that the boys in the High School carry on their work in drawing in a very practical manner.

They take their own measurements from different pieces of furniture, doors, and windows, and make measured drawings to a scale, so that a mechanic could work from the several drawings, and also detail work.

The Superintendent reports a new departure in the teaching of Science in the High School, which has been placed in charge of Professor Hathaway, a competent expert; and the laboratory system introduced, physics taught only in the higher grades, and made an elective study, so far as the girls are concerned.

It remains, then, that drawing and sewing are, as yet, the only branches of industrial education given in the public schools of New Bedford.

SPRINGFIELD, MASSACHUSETTS.

This busy, beautiful inland city, widely known as the site of the United States Arsenal,—that epitome of the inventive genius of Americans,—and as a notable railroad centre, might reasonably be expected to take unusual interest in all matters relating to industrial training; since, in addition to its own enterprises, it is in the immediate vicinity of several centres of manufacturing industries. With two local institutions, a daily journal and a hotel, that have made themselves famous all over the country for their enterprise and excellence, it is evident that the citizens of such a wide-awake place would not be indifferent to the interests of their public schools. For many years these schools have been fortunate in their management. Mr. E. A. Hubbard, a remarkable practical educator, now for some years one of the general visiting agents of the State Board of Education, was, for a long time, in charge of the schools of the city, and it is easily seen, from the tenor of his reports, that the present Superintendent is enthusiastically devoted to his noble calling, and that he believes in the intrinsic worth of the free common schools to the country.

The community in which were passed so large a portion of the active periods in the lives of such men as the late Samuel Bowles, and his long-time coadjutor Dr. J. G. Holland ("Timothy Titcomb"), who were impressing themselves on public opinion with each day's issue of *The Republican*, could hardly fail to take thoughtful interest in the welfare of the school children, no matter how pressing were the business demands of the rapidly growing town.

The latest information of the present status of industrial education in connection with the schools of Springfield was given by Miss L. E. Fay, at the meeting of the National Educational Association, in Chicago, in July, 1887. Before quoting from this it may be of interest to trace the beginning of this movement in the report of the school committee for 1882. In this report Mr. A. P. Stone, the Superintendent of the city schools, treating first of the education given in the common schools, "as a preparation for the practical duties of life," says:

> There are those who sometimes remark that education creates a distaste for labor and for self-support. It is singular that those who repeat this stale slander against education never attempt to show why it is so if it is true. It is an assertion easily disproved by actual observation. In my experience of pupil, teacher, and superintendent, I have seldom known a school, never a good one, where it was not enjoined upon pupils, as an incentive to effort, that nothing honorable or useful can be accomplished without labor; that what pupils become in after life depends more upon what they do for themselves than upon what others do for them; and, furthermore, that much of the hard work, so called by children, in schools, is to discipline and train their powers for the work of life. I have seen many young people go from the upper grades of the schools forth into the world, and my personal interest in their welfare has led me to watch them, as far as I was able, in their future career. But I have known very few of those who have improved their schooling who have not entered readily upon some calling that required application, effort, and self-reliance. * * *
>
> In connection with the above topic, there is a propriety, at least, in alluding to a great change that has taken place in the relation of young people to labor within the memory of some people now living. Under what was known as the apprentice system, boys were "bound out," or "put out to live," as soon as it was decided what occupation was to be followed. By the terms of such a contract the boy was to receive a certain number of weeks of schooling each year, and during the remainder of the year was to labor for his master, of whom he learned his trade or business. In such cases it was customary also for the boy to become a member of his master's family, where he received his board and clothing, and where his moral training, or his "bringing up," received careful attention. This was a happy combination of schooling and labor. But the very general introduction of machinery, the division and sub-division of labor, and active competition, have wrought an entire change; and the apprenticeship system, with its many advantages, especially

for boys, now scarcely exists at all. It is the result of a change in our civilization and not in the schools.

There is another flippant remark often made, that children are sent to school too much, and that many are being educated above the sphere in which they are destined to move. If this is true, why are they not withdrawn by their parents, with whom the responsibility lies? And who assumes to mark out the sphere in which any American child is destined to move? Who could have assigned to Lincoln and Garfield, at the age of ten years, their sphere in after life? It is the very spirit of our institutions that every child shall have a chance to do his best; the practical result of which has been, that from the humblest circumstances men and women have risen, in all the various callings of life, to positions of honor, and of the greatest usefulness to their fellows and to the public. Is there any sphere in life in which education is useless, or where it is not serviceable?

The bearing of common school education upon common labor has been frequently and thoroughly investigated, and the results are not doubtful in their meaning.

He refers to the results of inquiries on this point published by the United States Commissioner of Education, and then treats as follows of "Industrial and Technical Education":

INDUSTRIAL AND TECHNICAL EDUCATION.

* * * The common supposition that in most of the common schools of Continental Europe a great variety of trades can be learned, is a mistake. In charitable and reformatory institutions there are industrial schools, where the inmates are taught trades that they may earn their living, and not continue to be a tax upon the public.

There are some other schools, also, where special trades can be learned, usually such as are common to the locality. But, as a general thing, the schools corresponding to our common schools do not teach mechanics and other laborers their trades. There is, however, in those schools more or less provision for manual training; of which subject I shall speak again presently. In Great Britain, and to some extent in other countries, there are many schools, supported by mercantile and mechanics' associations, where industrial education is furnished. But the great technical schools of Europe, usually supported by government, either local or general, belong to the higher class of institutions. They teach scientific and technical knowledge to assist in the pursuit of the higher trades; and more especially to qualify persons to become, by the labor of brain and of hand, leaders and organizers of labor, and superintendents of great industrial and mercantile establishments, and of large landed estates. Many of these schools require a preparation for admission about equal in amount to that required by our colleges; and a recent English writer upon this subject says, that no student can profit by those schools until he has laid a broad foundation in a thorough knowledge of the elementary branches, including some science, and has attained the age of about eighteen years.

In Massachusetts the institutions which furnish special opportunities for higher technical education are as follows:

1. The Agricultural College at Amherst. * * *
2. The Free Institute of Industrial Science at Worcester. * * *
3. The Institute of Technology at Boston. * * *

All these schools are of a high order, and require for admission a knowledge equivalent to that usually acquired in our grammar schools and the first two years of the average high school.

There are also scientific departments in some of the colleges of the State, where specialties can be pursued.

But it will be said that these schools do not meet the wants of the masses; all of which is true. And the question now arises, can those wants be met in the common schools, the public schools of Springfield? Can trades or special occupations be learned there, and if so, what? The parents of the boys now in the Springfield High School are engaged in about eighty different callings. The question may here well be asked, What is the object of our schools? As generally understood, it is to give general training without reference to any special vocation; to teach the elements of knowledge, and to inculcate the principles of morality. That is, I think, the legitimate sphere of the American common school. But this does not imply that special knowledge and its application to particular industrial pursuits may not be taught elsewhere at the public expense. But such work does not belong to the studies of the common school, strictly so called. There are other and better ways to meet this demand outside of the common schools.

MANUAL TRAINING.

There is a theory entertained by educators and metaphysicians, that the intellect cannot be properly developed without training the hand. If this theory is correct, as is more than probable, cannot the studies in our schools be supplemented by a parallel course of manual training, that will improve the intellectual work, and at the same time give some facility in the use of common tools, and a training of the inventive powers and the judgment, that will ultimately develop in the pupil an inclination and an aptitude for some special calling, of a kind to be determined by his own taste and his special fitness therefor? It seems to me that, as an initiative in useful education, such a plan gives promise of good results.

He briefly describes the Dwight School experiment in Boston, and concludes:

I have no doubt the experiment would be equally successful in Springfield. Boys like to do something themselves, as well as to study and talk, as every teacher and parent knows from their almost irrepressible tendency to action of some kind.

As I have been requested by your Board, to suggest such modifications of the course of study and school work as will, in my judgment, be advantageous to the schools, I recommend that a trial similar to the above be made in connection with one of the grammar schools, and perhaps, the High School, if the city council shall think favorably of the plan; their consent being required by the public statutes for the establishment of any industrial school. It will not be expensive, and it will give the boys occupation, sharpen their inventive faculties, teach them application, and compel them to think for themselves. Any school work that does not require pupils to think is of little account. Should such an experiment meet with success and with general favor, I have no doubt it will suggest other and broader plans, that will eventually lead to a satisfactory solution of the problem of industrial and practical education. Practice means action, and all useful practice is in accordance with principles and theory. So when a pupil can apply the knowledge and power he has acquired in school to the useful pursuits and purposes of life, he is practically educated.

For the girls I recommend a trial of the introduction of sewing into one of the schools. It has been highly successful in many places in the State, and is entirely feasible in any school where the girls are old enough. It will require a special teacher, and must be put under as strict regulations and discipline as other school work. In mixed schools the girls can be gathered in rooms by themselves for an hour or two a week, while the boys can be given some special exercises or work in other rooms. In schools where sewing is taught it is said that girls come to take great pleasure in their work and in exhibiting it to their friends; and that those mothers whose time is fully occupied with domestic cares and with society, regard the instruction as of the highest importance for their daughters.

In his report for 1883, Superintendent Stone recommends that an evening school for instruction in free-hand drawing be established. Evening and draughting schools are held each winter, but only mechanical drawing is taught, and instruction in free-hand drawing has been sought. On this point the superintendent says:

> The terms, free-hand drawing, and instrumental or mechanical drawing, have had their origin, of course, from the means by which they are respectively performed and taught. But there does not seem to me to be any good reason for separating, to any great extent, the two kinds of work. Drawing is fast becoming increasingly useful and necessary in all the industrial pursuits of life; and it would seem to be in accordance with good sense, as well as with the principles of teaching, that we should give in this branch such instruction as is needed, whether the drawing is to be performed by the trained hand and the pencil alone, or by the aid of such instruments and appliances as the kind of work requires.

The report of the School Committee for 1884, signed by Mr. O. M. Baker, vice chairman, thus announces the introduction of sewing in the schools:

SEWING.

> This is one of the branches mentioned in the public statutes which the school committee may require to be taught in the schools. For several years many mothers have asked that this branch might be introduced into the schools of Springfield, and that their daughters might receive instruction therein. By a vote of the committee, some of its members and the Superintendent visited schools in Boston, Providence, and New Bedford, and saw the pupils at work under the direction of the sewing teacher, and obtained much information upon the subject. It was found in each of these places that sewing was popular in the schools and in good favor with the people; and it was also the uniform testimony of the teachers that sewing did not lessen the results in other studies nor interfere seriously with other school work.
>
> At the beginning of the spring term Mrs. C. E. Norton was engaged as teacher, and sewing was introduced into the lower and middle grades of the grammar schools; and during the past term it has been carried one grade higher. It has also been introduced into the Indian Orchard schools, with Miss Annie Tarr as teacher. The classes, usually composed of the girls of two rooms brought together, have one hour per week of instruction, and their work consists entirely of plain and useful sewing. During this hour the boys, in a room by themselves, under the care of a teacher, are engaged in practical work in arithmetic, writing, spelling, and other needed exercises. In every sense, we think the introduction of sewing has been attended with very satisfactory results. While it does not seem to detract from other work in the school, it does teach the girls an accomplishment of the greatest usefulness, and one without which it is the greatest misfortune for any girl to grow up to womanhood. The mothers of the pupils are hearty in their appreciation and praise of this branch, and we hope that before the close of another school year they and the public will have an opportunity to see an exhibition of the work done, which will speak for itself. With the exception of drawing, which is eminently practical when properly taught, sewing is the only branch of industrial training, strictly so called, that we have in our school work.

The report of the School Committee for 1886, signed by Mr. George H. Bleloch, is evidence that the seed sown by the Superintendent in his report for 1882 has borne abundant fruit.

DRAWING.

The department of drawing, owing to its intimate relation and influence on the industrial arts, deserves and is receiving special attention from the committee. Miss L. E. Fay, the accomplished instructor in this branch, has developed a remarkable aptitude for directing and applying it to practical things, and her zeal in the work is unfortunately leading her to sacrifice her strength in advancing this branch of education. An assistant should be secured for two reasons: First, because the present instructor is overworked; second, because the class rooms should, until the regular teachers are more expert in drawing, receive semi-monthly instead of monthly visits from the drawing teacher, as is the case at present.

INDUSTRIAL EXPERIMENTS.

It has been and will continue to be the aim of the committee to bring the course of study in the schools into harmony with the best and most practical educational methods known, in order that the analytical, reasoning, and constructive powers of the scholars may be developed, that they may become familiar with practical things, and leave school, when circumstances compel them to join the great army of workers, equipped with knowledge, so far as it goes, that will be useful to them in whatever honest occupation they may follow. As nearly 95 per cent. of the scholars who go out from the schools will from necessity become engaged in some kind of manual labor, it is important that manual training should have an established place in our school system, not for the exclusive benefit of those who are destined to lives of toil, but also for those who may be called to enter the learned professions. It has been truly said that "manual training is essential to the right and full development of the human mind;" therefore the young man or woman who encounters the world with only the mind trained is not fully equipped to commence either a mechanical, scientific, business, or professional career. Impressed with the importance of these truths, the committee has taken steps in a modest way to introduce into the schools manual in connection with mental training.

SEWING IN THE SCHOOLS.

Two years ago a competent teacher, Mrs. E. C. Norton, was employed to instruct the girls in the first four grades of the grammar schools in the art of cutting, fitting, and sewing; this innovation was made by authority of the public statute, that leaves optional with school committees the matter of teaching sewing in the public schools. The results have been so satisfactory, that it may be considered wise to reduce it to a more perfect system and to introduce it to some of the other grades.

MANUAL TRAINING FOR BOYS.

To establish a school for manual training required a special appropriation from the city government, as the public statutes do not allow industrial schools to be maintained from money appropriated for general school expenses. The committee considered it their duty to make a beginning in this direction, and on March 1 petitioned the city government to appropriate $1,000 to equip an experimental industrial school and employ a competent teacher to conduct it. The appropriation was promptly made, the basement of the High School building was selected as the most suitable place at the command of the committee, and George B. Kilbon was engaged as an instructor. Attendance at the manual training school could not, under the law, be made compulsory, and volunteers were called for from the freshman class of the High School, and the eighth and ninth grades of the grammar schools; that the boys should not be less than thirteen years of age was the only condition of admission.

Eighty-four boys manifested their desire to be enrolled for the term beginning in September, and eighteen of them, expressing a wish to receive instruction during the summer vacation, were formed into two classes, and Mr. Kilbon arranged to give three lessons a week for four weeks. Thirteen benches, designed for wood working, were obtained and equipped with suitable tools for the class of work to be taught; three large cupboards, each containing thirty-two compartments, were provided for the convenience of the pupils. The school opened on July 12 with the two vacation classes, which by this time had received recruits, increasing the number to twenty-two scholars. The fall term opened with an enrolment of ninety-one scholars, which number soon increased to ninety-six, and these were divided into eight classes of twelve scholars each. It was arranged that each class should receive one lesson a week of one and one-half hours' duration, and Mr. Kilbon was employed to devote three days a week to the school, as the amount of the appropriation did not warrant the committee in engaging his full services. The course of instruction arranged by Mr. Kilbon consisted of fifteen lessons, divided into forty-five problems, covering the use of the hammer, nail driving, measurement, use of the try-square, gauging, sawing to line, cutting to length, cutting to width, shelf making, box making, use of dividers, boring, use of brad awl, use of chisel, examples in construction, and the general use of carpenters' tools, their parts described and defined, their adjustment explained, and the pupils taught to keep them in working order. On November 9 an additional class was organized for Saturday afternoons, consisting of twelve scholars from private schools.

The Saturday morning class has among its members four of the grammar school principals and the drawing teacher. This fact is mentioned to show the interest manifested in manual training by many of our most accomplished instructors.

The cost of the experimental training school, from its establishment to January 1, is as follows:

Cost of equipment	$503 19
Cost of material	60 11
Salary of instructors	231 14
Balance of appropriation not used	205 56
Total	1,000 00

The remainder of the appropriation will carry the school, on the present plan, until March, 1887.

In view of the encouraging results of the experiment, as far as it has been carried, the committee ventured to suggest that the incoming city government make an appropriation of $5,000, in order that the scope of the school may be extended to include wood turning, and metal working in some of its simpler branches, and that the full time of the present instructor be secured for the work. The latter step will be a necessity if Mr. Kilbon's valuable services are retained, as it is understood that the present arrangement of part time cannot be continued after April 1.

The basement of the High School is not a suitable place for the continuance of the experiment, owing to dampness and insufficient light, and a light, dry, well ventilated work room, with the privilege of power, will be required. It is believed, that $5,000 will cover the expenses of the instructor, supply additional tools and materials, and pay the rent for room and power. The tools and equipments now owned by the city, and all that may be bought, as suggested, will come into play in case the experiment develops into a permanent part of the school system. It is the testimony of the principals of the High School and the grammar schools, that the time given to manual training has not retarded the pupils in their regular studies.

SIMULTANEOUS MENTAL AND MANUAL TRAINING.

The committee cherish the hope that in the near future the liberal citizens of Springfield will provide for the use of the city, under proper regulations, suitable buildings, in which at least one hundred pupils can receive simultaneous mental and manual training. The cost of such buildings, exclusive of land, fully equipped with all the appliances for instruction in wood and metal working, need not exceed $40,000. Pupils for such a school should not be less than thirteen years of age, selected for merit after passing grade eight in the grammar schools, or with the same requirements if taken from parochial or private schools. They should be given a three-years' course in manual training in connection with regular studies, consisting of mathematics, drawing, the sciences, and the English branches of the high school course. The manual training department should include instruction in carpentry, pattern-making, wood-turning, filing, forging, brazing, soldering, and the use of machine-shop tools. The time of the pupils should be equally divided between mental and manual exercises. It is a remarkable fact, established by experience in manual training schools, that scholars who devote half of their study hours to manual exercises make equal progress in mental work with those who give all their study hours to it. The cost of maintaining a school of this general character would not greatly exceed the cost of high school instruction, which in this city was $36 per capita for the year 1886. Fifty dollars per capita ought to pay the expenses of maintaining a manual training school of one hundred pupils.

The object in establishing such a school is not to train apprentices and teach trades, but to drill pupils in the fundamental mechanical principles that are the basis of all trades, and "to foster a higher appreciation of the value and dignity of intelligent labor and the worth and respectability of laboring men." Its graduates will become intelligent workingmen, producers of wealth, developers of the inexhaustible resources of our country, and the promoters and defenders of that peculiarly American civilization which is destined, in God's providence, to lead the world in every art and industry. The benefits to this community of such an institution would be incalculable in maintaining the prestige of Springfield as a manufacturing centre, where mechanical construction has been carried to the highest degree of refinement.

The fame of Springfield rests almost entirely on the reputation of her mechanics and the marvellous products of their skill and genius, a fact not fully appreciated here, but recognized in every market of the world. There is danger that her fame will be overshadowed by energetic and wide-awake Western rivals, who are alter to everything that promotes their material progress, unless a united and practical effort is made by the city government and the moneyed and manufacturing interests of the place to maintain its prestige and preserve the pecuniary advantages that are involved in it.

In addition to this full report by the committee, the Superintendent says:

THE SPECIAL BRANCHES.—Good work generally can be reported in the special branches. Drawing is more practically taught every year. The primary grades need models for the study of form, as the grammar grades are already supplied with them. Penmanship is improving and sewing is continued with satisfaction. Music is giving promise of good work, especially in the lower grades, where the influence of a new teacher in this branch is first felt. * * *

MANUAL TRAINING.—The manual training school has had a trial of less than a half year; but I have no hesitation in predicting that it will be, as it has thus far been, a success. I feel assured of this from my belief in the possibilities of such a school rightly conducted, from the fitness of the person in charge of it, and from the interest and progress of the pupils at work in it. In establishing this school, Springfield is no more than keeping abreast of public sentiment upon the subject of practical education throughout the country. Philadelphia, Baltimore, Toledo, and other places have entered upon this work with vigor and success.

Superintendent Stone also makes, in an appendix, a special report on Kindergartens in relation to their adaptability to public schools, and recommends their adoption.* So in four years the movement had advanced from the first presentation of the subject by the Superintendent to the actual introduction in the schools of industrial training for both girls and boys.

The following succinct notice of the paper read by Miss L. E. Fay before the National Association in Chicago, July 15, 1887, as her contribution to the discussion of "The Place Manual Training should Occupy in a System of Public Schools," is from the Chicago Tribune of July 16. The statement by President Sheldon shows that the recommendation of the School Committee in their report for 1886 has met with a speedy response, and that in 1887 Springfield falls into line with Baltimore, Philadelphia, Cleveland, Toledo, and Omaha, in providing facilities for full courses of industrial training in the public schools.

Miss L. E. Fay, of Springfield, Mass., was then introduced, and read a paper that was illustrated with some of the work done at the Springfield school.

"A radical change should be made in the first year's course of study, so that a strong foundation for manual training can be laid. In the first and second years the child should be taught the forms of solids by the use of moulding clay. This exercise develops the muscles of both hands. In the fifth year working drawings from the geometric solids should be taught, and after that the systematic study of working drawings should constitute one-third of the course. Sewing should be systematically commenced the fourth year. Manual training teaches self-discipline to the boys, and it could not therefore be confined to boys. Girls should be taught the use of tools, and they could profitably be taught cooking with their chemistry."

President Sheldon complimented Miss Fay very highly, declaring that she was the "boss lady carpenter of Massachusetts." As the result of her work, with an appropriation of $1,000 for the first year, the citizens of Springfield had purchased a building next to the High School for $40,000, to be used for manual training.

The Tribune editorially commends the paper read by Miss Fay in the highest terms, as to matter, arrangement, literary execution, and delivery.

WORCESTER, MASSACHUSETTS.

This prosperous central city of the Commonwealth is well known to all interested in technical education as the home of the Worcester County Free Institute of Industrial Science.

It is quite possible that the opportunity for seeing the excellence of the instruction given in this famous technical school has led the observant Superintendent of city schools to underestimate the value of the proposed industrial training in common schools, which, under the most favorable circumstances, must of necessity fall far short of the high standard set by this special school. Be that as it may, it remains that Superintendent Marble gives no adhesion to the propositions put forward by the advocates of "manual training" in schools, but combats them relentlessly.

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* This report on Kindergartens will be found in Appendix I.

It should be premised, however, that the introduction of industrial art drawing in the schools of Worcester some ten or twelve years ago was actively encouraged and fostered by the Superintendent.

This study has for some years been in charge of Mr. Walter S. Perry, as director, who has proved successful as teacher and lecturer. The city, as all towns in the State having a certain population are required by law to do, maintains free evening schools and evening drawing schools, all of which are largely attended.

In his report for 1884, Mr. Marble says:

> Drawing is made a regular study in the grammar schools throughout the course. * * * Nor is this all. From the most elementary stage to the completion of the course in the High School, this study is carried on in three parallel lines: copying from the flat, drawing from models, and original design. The development of this plan as it appears in the successive stages is interesting as a study in educational method. Designing by the pupil from its first simple steps to something more complete in the higher grades develops an originality in many a pupil which would otherwise remain dormant. And drawing is the single best study, directly tending to industrial education—a subject about which there is wide-spread misapprehension, and of which something will be said below.

Later in this report he proceeds to speak at length on that topic:

INDUSTRIAL EDUCATION.

> * * * There is a class of social reformers who look to the public schools for the cure of every evil that infests society—evils for which these schools are in no way responsible, and with which they are not specially fitted to cope. From the decay of the apprentice system, consequent upon the rapid introduction of machinery in all kinds of work and the resultant division and minute subdivision of labor, and from the difficulty of getting employment, which always existed, but which becomes more apparent when large numbers of people seek a livelihood in cities, instead of remaining self-employed and self-sustaining tillers of the soil—from these causes with which schools have nothing to do, our educational empiricists and our social reformers would lay upon the public schools the burden of a special preparation for one or more of the active industries of life by teaching various kinds of trades.
>
> The unwisdom of adding a burden of such doubtful utility and possibility of accomplishment upon a curriculum which is said to be already overcrowded is a subject too broad for adequate discussion here. It is indeed quite possible that the social fabric may need some reconstruction with respect to the preparation which a child needs for active business, since the parents are usually so employed in stores, or mills, or factories, that they have no opportunity to instruct their children. It is far more clear, however, that the public schools, as at present organized, cannot successfully accomplish what they may and ought in the direction of intellectual culture and a broad and general training useful in any business, and at the same time undertake with any reasonable hope of success to supply the place of the

old apprentice system. This being the case, the demand for such training, if it exists, should be supplied in special schools.

It is not to be denied that great good may be done in the public schools in turning the attention of pupils to industrial pursuits through an examination of the industries of the vicinity while pursuing their studies in school. By this means they avoid the natural error into which many fall that all study is preparatory to a pursuit more or less literary. The method by which the interest may thus be awakened, while at the same time the specific work of school can be improved, was pointed out in the last report. It consists in systematic visits to manufactories and study of the processes seen, and in subsequent descriptions of what has been observed and learned. Nothing better can be done to improve the style of composition and to cultivate correct habits of thought. The interest in the industries themselves is all the more valuable for being incidental.

HOW THE TECHNICAL SCHOOLS AROSE.

When the need of the higher technical education was felt, as distinguished from the classical and literary training of the colleges, technical schools at once sprang into being. In like manner industrial schools will be forthcoming as soon as a real and not a merely fictitious want exists. The best evidence of such a want would be the demand of the people themselves who have a personal interest in the matter. The demand, so far, does not as a rule come from that class of people at all. It is heard mostly from theorists, who anticipate a stratification of American society into classes similar to the older European communities.

The development of the drawing schools fully illustrates the method by which such separate elementary industrial schools as are here contemplated will spring into being when the time becomes ripe for them. Feeling the need of a better knowledge of draughting among workmen in shops of various kinds, the Worcester County Mechanics' Association in this city organized schools for the apprentices, so called, who form a branch of that body. The experiment of conducting those schools, made by a class of men who knew what they wanted and could find a way to get it, demonstrated both the utility and the necessity for such schools. No sooner was this accomplished than the law creating them expressed the popular will, and now those schools are a part of the public school system. The crystallization of the results of experience into a State law, it may be proper here to remark, was accomplished largely through the efforts of that eminent pioneer of technical education, the founder of two of the best institutions in the country, Dr. Charles O. Thompson, now of Terre Haute, Ind.*

The Mechanics' Association of this city—and similar institutions no doubt exist in almost every other city of New England—is eminently fitted for conducting experiments with industrial schools, as they have conducted to a successful issue the experiment with drawing. This is in their line. They are practical men, who deal with real things and active boys in flesh and blood, and not with the fictions of the imagination. Whatever want there may be for such training they feel. The kind of training most useful they know. How best to secure that training they also know by experience. When once the necessity for schools of this kind shall have been demonstrated, and the best method for securing the best results shall have been shown through the experiments of this and other associations, who alone are qualified to conduct them profitably, then the law will forthwith embody the popular will founded on such apparent facts, and public elementary industrial schools will come into being. In the mean time let the *dilettanti* continue to amuse themselves and the public with their little shops and sets of tools in the basements of school houses. They will do no harm except to spend a few thousands of dollars, and they will keep themselves and possibly a few boys out of mischief.

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*At the time of printing this report, March, 1885, we have to mourn his untimely death.

In the direction of the experiment with special elementary industrial schools set forth above, it is pleasing to note that last summer a class of boys spent the long vacation in the shops of the technical school in this city, which were kindly furnished for the purpose by the trustees and faculty. It is to be hoped that the same thing will be tried again.

In the report for the year 1885, Superintendent Marble, after commending the work in drawing and reprinting a statement of "methods" by Director Perry, thus sums up his objections to the arguments advanced by the advocates of industrial training in the schools. As the conclusions of an experienced and successful school superintendent, who has shown himself fully appreciative of the educational and practical value of industrial art drawing in the schools, and who has always shown the courage of his convictions, these statements merit consideration, and are here given as being a valuable contribution to the discussion; the object of this compilation being to present the results of actual experiments and the conclusions of practical educators.

OBJECTIONS TERSELY STATED.

Mr. Marble says:

Manual training has engrossed the attention of its few advocates as an "annex" to the public schools, the past year very much as in the few years last preceding. In a few cities of the country schools have been opened in the outbuildings or basements of school houses, and these have been heralded by the worshippers of the fetich as the coming of a dawn in the educational firmament that is to usher in a glorious day. Every special school in Europe, and technical schools in this country of any grade and of all aims, are catalogued and paraded as evidences of the great progress in industrial education, and of the public enthusiasm in its support. Just as if a polytechnic school in Paris a score of years old, and fulfilling a definite and most excellent purpose, were an argument in favor of opening a little play-shop in every school house; or as if a special school in Saint Louis, maintained by private munificence, with an attendance of two hundred or three hundred pupils, paying tuition, had anything to do with the twenty thousand or more public school pupils in that city beyond the mere advantage which a more or less successful experiment may confer. Nobody questions the utility or the necessity of technical schools; the interesting character of special schools—sewing schools, cooking schools, moulding schools, or what not—is admitted; and such special schools will be established whenever they are needed. But it does not follow from such utility or such an interest that the whole school system needs to be revolutionized, or that the general usefulness of that system should be put in jeopardy to try a doubtful experiment at the beck of uneasy agitators; an experiment involving loss of the energy needed in the proper conduct of schools, and loss of money in untold thousands. The demand for manual training throughout the system of public schools exists only in the minds of a few enthusiasts. The apparent call for such training is created by a few voices echoing and re-echoing the refrain, and magnifying the few experiments that are being tried into a general educational movement. Magazine writers and newspaper paragraphers reiterate the same old strains in praise of the little shop at Gloucester, the Boston basement, and the more recent Toledo movement, just as if they were general and representative. Such experiments—and they are to be highly commended, because they cannot help showing the futility of their becoming general—bear about the same proportion to the schools of the country that the congenitally blind or deaf bear in number and importance, to the whole community.

In one respect the agitators of this kind of annex to our schools have made progress, namely: Heretofore they have not known whether such schools should aim to popularize the manual industries, to produce skill in the various trades, to keep children in their proper sphere, or whether they are a necessary part of a complete education. It now seems to be the prevailing sentiment of their advocates that no education is complete which does not include the training of the muscles; and that habits of exactness, for example in thought, can only be secured by that necessity for exactness which is involved in such a mechanical act as fitting a tenon into a mortise! It follows that nobody has been properly educated up to the present time, and a new species of men is about to be developed, if only the world can be induced to adopt this theory. In this city our financial condition compels us to wait; for we cannot act upon this theory and be the first of the new creation because we cannot just now command the necessary funds.

The special vacation school at the Technical Institute, and the co-operation in that enterprise of the Mechanics' Association, continued last year, as the year before, to meet the popular demand for manual training in this city, not, indeed, "educationally" and in this most advanced form, but practically and up to our present light. A few benevolent ladies have also opened a cooking school, where about twenty-five girls learn to prepare, economically, various articles of food—which they forthwith proceed to devour. This movement is a good one. About twenty-five homes are the better for it. No doubt the number would be doubled by another school, trebled by a third, and so on to an indefinite extent. May the number of such schools increase! But it must be confessed there is little prospect that they will soon attach themselves to the public schools of the city.

Something has been done also the past year in the way of studying the industries of the city by pupils of the grammar schools, though not as much as was hoped, because other duties have engrossed the time of both teachers and pupils. What has been accomplished, however, confirms the belief that great possibilities lie in that direction. The details of that scheme and also the work of the Mechanics' Association have been given in former reports, especially in that for 1884.

RHODE ISLAND, CITY OF NEWPORT.

Hon. George A. Littlefield, Superintendent of Schools, Newport, R. I., recommended, in his report for 1884–'85, an appropriation for teaching sewing to girls in grammar schools and carpentry to boys in schools above third grammar grade.

An inquiry as to what provision had been made, if any, for industrial training, elicited the following letter:

NEWPORT, R. I., *March* 29, 1887.

DEAR SIR: In answer to your letter of January 7, permit me to say that we have not yet established a public industrial school. Our city government could not grant the appropriation asked for the purpose in January, 1886.

Since then a private evening school for teaching boys the use of tools has been opened here under the most favorable auspices. Within a year, too, a lady who had previously made large gifts to the city, Miss Ellen Townsend, has left by will a good sum to be expended by our school committee "in aiding promising boys to learn useful mechanical trades." It is expected that out of this bequest a flourishing industrial school will ultimately be organized.

Hon. S. I. Dutton, Superintendent of Schools in New Haven, will address a meeting here on the subject next month. His manual training school is doing excellent work.

Most respectfully,

GEORGE A. LITTLEFIELD,
Superintendent of Schools.

Mr. I. EDWARDS CLARKE,
U. S. Bureau of Education.

CONNECTICUT, CITY OF NEW HAVEN.

The movement for manual training of boys and for some form of industrial instruction of girls in the public schools early attracted the attention of the school authorities of New Haven, Conn., which city was also one of the first to take up the study of drawing. The history of this last industrial movement, as given in the reports of Mr. Dutton, City Superintendent of Schools, will be found in the Appendix. The Superintendent gives the credit for the initiation of the experiment in 1883 to Mr. Camp, principal of the Dwight Grammar School, and to Mr. French, principal of the Skinner School. A room was fitted up in each of these school buildings, and classes of boys, from the several grammar schools, attended each week on a two-months course of manual training with carpenter's tools. In this way a large number of boys received instruction each year. A class for teaching the girls sewing, knitting, embroidery, etc., was also organized under one of the teachers, which met each week in one of the recitation rooms. These experiments proving satisfactory, the introduction of some form of industrial training in all the grades, "from the kindergarten to No. 12" has been undertaken. Classes were also formed in wood carving, repoussé work, and modelling. The following letter from Mr. Camp gives the most recent information of the movement, which seems to be completely successful:

DWIGHT SCHOOL,
New Haven, Conn., January 10, 1887.

Mr. CLARKE:

DEAR SIR: In addition to what I sent you before upon our industrial work, I would say that the committee have now rented a large room, centrally located, and fitted it up with joiner's benches, tools, etc., and employed a regular teacher, who devotes his whole time to teaching the different classes of boys who are sent him the use of tools.

He has ten classes, of 24 boys each, or 240 different boys each week. These come from the ten grammar schools of the city. This takes the place of the smaller classes we had in the Dwight and Skinner Schools, and gives the advantages of instruction to a larger number of boys.

The kindergarten work and training the hands and eyes is continued in our primary grades, and sewing, modelling, repoussé work, etc., are still continued in the intermediate and grammar grades.

I forward to you our Superintendent's last report, which mentions some of the work done in the manual line.

Very truly,

L. L. CAMP.

In the previous statement in the report of the U. S. Commissioner of Education of 1884–'85, to which Mr. Camp refers, he stated that 118 boys in all had taken the manual training lessons during the year ending August 31, 1885; he also mentioned that the industrial training of the girls had not been neglected, a class of some 50 having met weekly for instruction in needlework, etc., and that some form of industrial work had been put in all the grades, from the kindergarten to No. 12.

From the report,* kindly forwarded by Mr. Camp, the following statements concerning the industrial work in the New Haven schools, made by City Superintendent Samuel T. Dutton, in his latest report to the City Board of Education, are taken:

MANUAL TRAINING.

I.—Drawing.

Under the efficient direction of Professor Bail, instruction in drawing has been given in all grades. In the grammar schools special attention has been directed to free-hand and mechanical drawing and the development of geometrical solids.

The fourth class, high school, has been engaged in geometrical drawing, consisting of plan, elevation, and sections, working and isometric; free-hand designs and drawing of geometrical solids, vases, and other objects.

Third class, plans of houses, working drawings and orders of architecture; perspective drawing of furnished rooms and other objects by measurement.

Junior and senior classes, object drawing from nature.

Since the introduction of mechanical drawing the work in this department has grown beyond the capacity of one instructor. It has therefore been thought best to relieve Professor Bail by appointing a competent lady teacher to take charge of drawing in the primary and intermediate grades. Miss Ada B. Hyde, who for the past year has been in charge of No. 12, Woolsey School, has been appointed to this position.

II.—Primary or Kindergarten Work.

Good progress has been made in selecting the most feasible kindergarten occupations for use in the schools. These exercises not only develop manual dexterity, but teach the elements of form, color, geometry, and natural science. The materials used are comparatively inexpensive, and I believe that a small expenditure may wisely be made for this object.

III.—Sewing.

The unanimous vote of the board to introduce sewing as a regular exercise in the intermediate and lower grammar grades was perhaps the most important legislation of the year. During the last four months of the year Miss Lillian A. Gladwin, a substitute teacher, was engaged in organizing and instructing classes in this useful branch. A few months will suffice to introduce this industry into all the schools, and it is expected that as soon as practicable the regular teachers will take charge of it.

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* Annual Report of the Board of Education of the New Haven City School District for the year ending August 31, 1886. New Haven: Tuttle, Morehouse & Taylor, printers. 1886. Pp. 99.

IV.—MODELLING.

Professor Bail has taught classes in clay modelling and plaster casting in the Dwight, Skinner, and Woolsey Schools. The instruction was given after school hours, but decided interest was taken in the work. Whether it is practicable to continue these classes does not appear clearly to me, but I am convinced that some clay work should be done in every primary room, as an aid to drawing and a knowledge of form.

V.—WOOD WORK.

Detachments of boys from all the grammar schools, excepting the Woolsey and Winchester, have been trained in carpentry in the basements of the Dwight and Skinner Schools. The results were the same in kind, though more extended and complete, than those described in the last report. This department has evidently outgrown the accommodations afforded by the two basements, and the vote of the board to secure other quarters and employ a regular instructor is a long step forward in the development of manual training in our schools Special credit is due to Principals Camp and French and to Messrs. Judd and Loper for the zeal and self-sacrifice they have shown in starting and carrying on this enterprise.

With all respect to those who are arrayed against the old State House, the opinion is here given that that building is the most available place for manual training, both because it is central and because there would be no expense for rent. Should it be deemed wise to engage other quarters, an appropriation of not less than $1,500 would be desirable in addition to the income of the Boardman fund.

An industrial exhibition was held in New York in March, at which the New Haven Schools were represented by quite an extensive exhibit. Much information was gained there, which was found to be of value in preparing for the exhibition held in New Haven during the month of June. In the work of preparing for this occasion there was hearty co-operation on the part of principals and teachers. Not less than twenty-five thousand people, young and old, availed themselves of the privilege of viewing the exhibits, and general satisfaction was expressed with the results, both of school and home work. The press of the city devoted a generous amount of space to the subject, and did much to arouse public interest. The following statement shows the cost of manual training for the past year:

MANUAL TRAINING ACCOUNT, 1885--'86.

Amount received from Boardman fund	$340 00	
Amount appropriated by the Board of Education	600 00	
		$940 00
Amount spent for lumber, nails, and other materials	176 46	
Amount spent for tools	34 26	
Amount spent for instruction	340 00	
Amount spent for sewing	78 31	
Amount spent for tools, clay, plaster paris, etc., for modelling	135 78	
Amount spent for industrial exhibition in High School hall	174 30	
		939 11
Estimated value of tools owned by the district	250 00	
Estimated value of benches, etc., owned by the district	48 00	
Estimated value of lumber, etc., on hand	30 28	
		328 28
Estimated value of tables, easels, etc., made for the schools during the past year		52 65

CHAPTER XIV.

EXPERIMENTS IN SOME OF THE MIDDLE STATES.

New York City a large manufacturing centre — Incitements to the promotion of technical training — Private efforts to afford opportunities for industrial education to mechanics — Peter Cooper — Drawing in schools enforced by law of 1875 — President Walker reports concerning, in 1884 and 1885 — The Board of Education consider the propriety of introducing industrial education — Report on, in 1884 and 1885 — Subject referred to a special committee — City Superintendent John Jasper directed, in autumn of 1886, to thoroughly investigate the subject and report; this report to be submitted by committee to full board in autumn of 1887 — Extracts from this report — Summary of recommendations made by the committee — President Hunter recommends that manual training be taught in the City Normal College — Principal Hagar's successful teaching of manual training to girls in the State Normal School, Salem, Mass — Action taken in towns and cities in the State of New Jersey — Interest taken in the subject by the late General George B. McClellan when Governor of the State — Superintendent Apgar — E. A. Spring, Esq., sculptor — Statements of experiments in Newark made by Superintendent Barringer — Newark Technical School — Report of Director C. A. Colton — Design of school and course of study — Methods of instruction in detail — Comments on the word "technical" — Account of the Montclair Technical School as given in State Superintendent's report — Established some years before the enactment of the State law — Account of same school by the teacher, Mr. John V. Shaw — Montclair report of Superintendent Spaulding — An interesting example of what educational enterprise can do in a small village — Details of studies, methods and expenses — Course of instruction in wood working given in detail — Satisfactory results of this interesting experiment — Hoboken — Extracts from the Annual Report of the City School Department — Exhibition of school work — Report by Miss Lowden to the Industrial Education Association — State of Pennsylvania — Philadelphia — Recent changes in the organization of the public school officials — The first City Superintendent of Schools — Hon. James MacAlister called from Milwaukee, Wis., to take charge in 1883 — First report of the new Superintendent, 1884 — President Steel, of the Board of Education, earnest in support of advance movements — Drawing and sewing in the schools — Night schools — The Artisans' Night School — President Steel's Report for 1884 — Endorses the Superintendent in his innovations — Treats of Industrial Education — Report of Mr. George W. Fetter, principal of Girls' Normal School — Extracts from President Steel's report for 1885 — Industrial Training — Kindergartens — Primary schools — Manual training should be begun in primary schools — The Industrial Art School the outcome of Mr. Leland's experiments — Report by the Director — Course of instruction in Industrial Art School — Conditions of admission to this school — Duties of the committees in charge of Industrial Training — Baltimore, Md — A meeting of the officials and heads of all the public and private institutions of the city in which industrial or artistic training is given — A comprehensive view of the benevolent and educational efforts put forth by a great city to combat ignorance — Address by President Morris — Manual Training — Industrial training for girls — Account of the development of industrial education in the State Normal School — Professor Newell's paper read by Dr. Richard Grady.

NEW YORK, CITY OF NEW YORK.

The great city of New York is not only the largest commercial city, but is also one of the chief industrial cities of the country. Teeming with a population of skilled artisans, it produces a greater variety of artistic manufactures than any other American city. The local demand for workmen possessing technical and artistic skill is greater than in any other place; because New York not only supplies its own citizens, but is a great centre for the production and supply of works of art demanded by the whole country. Since the city itself offers to its citizens such varied opportunities for employment in artistic industries, the slowness of the public school authorities to keep step with the new educational movement, which practically began in this country in 1870, has been surprisingly in contrast with the readiness shown by the authorities of smaller cities and towns to avail themselves of the new facilities. Nor are the industrial opportunities offered to the citizens trained in the schools of the city by any means confined to the limits and the business of the city itself. Two large contiguous cities, and numbers of encircling towns and villages, offer employment in ateliers, workshops, and manufactories to every form of skilled labor. Nowhere else in the United States are equal incentives offered for the attainment of technical and artistic skill.

LIBERAL EFFORTS OF PRIVATE CITIZENS.

In no city, however, have private individuals been quicker to see the need for, or more liberal in providing means of, disseminating such knowledge.

The name of Peter Cooper is world-famed, and his example has been an incentive to like actions throughout the whole country. The liberal trustees of the Metropolitan Museum, the Art Academy and the Art League, the various art and industrial associations, the Society of Mechanics and Tradesmen, and similar educational bodies, which are recorded later in this Report, all bear witness to the intelligence and public spirit of the citizens; while the lately founded vigorous "Industrial Education Association" gives proof that a large body of the foremost citizens are fully awake to and abreast of this New World movement in education.

But all these private enterprises, admirable as they are, but emphasize the one lesson, and that is, that great public needs can only be adequately met by public instrumentalities. This is universally admitted in America, as is shown by the assumption by the community of the duty and burden of free public education, and in countless other ways too obvious to need mention; of these, the making and control of public highways, the control of harbors, the monopoly of the mails, may be instanced as illustrations.

DRAWING IN THE CITY SCHOOLS.

The passage of the law in 1875 requiring industrial art drawing to be taught in all normal schools and in some one grade of the public schools in cities, resulted in the introduction of drawing in the schools of New York City, as was stated in the preceding volume of this Report. The following extracts from the two latest annual reports of the City Board of Education, signed by the late president of the board, Hon. Stephen A. Walker, LL. D., show the condition of drawing in the schools, which begins in the sixth grade of the primary schools and runs through to the first grade; then is continued from the eighth grade of the grammar schools to the first grade; ending with "the drawing of various original designs for industrial purposes."

It will be seen by their treatment of the subject of "Industrial Education" that the board are not indifferent to the movement going on all around them, and that perhaps the reason for their apparent delay in taking action is to be found in the old aphorism that "large bodies move slowly!"

They seem to understand clearly that thorough training in industrial art drawing is the only sound basis for other forms of industrial education, and that in securing this training all grades of the public schools they have reason to feel that a sure foundation for further development has been laid.

On the topic of "Drawing" the report* says:

DRAWING.

According to Froebel, "the faculty of drawing is as natural to the child as the faculty of speech," and it is the policy of the law of this State not only that in each of the State normal schools the course of study shall embrace industrial or free-hand drawing, but that "the board of education in each city of this State shall cause free instruction to be given in industrial or free-hand drawing in at least one department of the schools under their charge."

Complying with the requirements of chapter 322 of the laws of 1875, and its amendments, this Board has provided not only that exercises in drawing shall be given in each primary and grammar school, but provision is made for the teaching of drawing in every grade of the school course. The old system of picture drawing is entirely abandoned, and in its place a logical system has been introduced, which begins with teaching the drawing of right lines and curves, and finally teaches the elements of perspective, and affords practice in geometrical and industrial drawing.

* * * * * * *

This course is arranged in recognition not only of the value of drawing as an educational process, but of its great practical use as "the universal language of handicraft." It is the basis of all trades which depend upon design; mechanical drawing leading to mathematical precision, and the free-hand drawing to correct observation and the development of the sense of harmony. The great majority of our public school children ultimately enter upon industrial pursuits, and the course of drawing as now afforded them is such that the result of their study can be applied advantageously in whatever trade or occupation they may take up. Lying at the basis of all the trades and of every constructive industry, the use of the pencil precedes the use of tool or of the machine, and is the necessary first step in any industrial education whatever. As to-day taught in our schools, it is an approach to that industrial and technological training which is now receiving the attention of the Board.

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*Forty-third Annual Report of the Board of Education of the City of New York for the year ending December 31, 1884. New York: Hall of the Board of Education, corner of Grand and Elm streets. 1885. Pp. 349.

INDUSTRIAL EDUCATION.

Many members of the Board believe that while the present course of studies has not failed and does not fail in developing the minds of the pupils, the end which our school education is meant to subserve could be as well, or even better, attained by a course of studies which, recognizing the fact that all the senses as well as a few of them should be educated, should proceed upon the principle not only of being a discipline for the scholar, but of adding to his or her usefulness by training the eye and hand as well as the mind. They believe, with a prominent authority upon this subject, that "while the training of the mental faculties must always be the first and distinct aim of all education, still this training is most effective when all the senses are most fully brought into play as factors in the general process." Remembering that well-trained workmen are becoming scarce, that apprenticeship in the trades is almost a thing of the past, that most of the graduates of our schools avoid the trades and become clerks or shopkeepers whenever it is possible, or enter upon industrial pursuits with no or very bad equipment for their work, the Board is now considering whether our course of studies cannot be so changed as not only to add to its educational value, but to make it of much greater utilitarian value to the pupils themselves.

PURPOSE OF THE COMMITTEE.

With this in view, a committee has been appointed to inquire into and report to the Board on the advisability of incorporating with our present course of studies a plan of elementary industrial education which may increase the value of our entire system, both educational and otherwise, and which may recognize those aptitudes on the part of the scholar other than such as are recognized by the traditional studies of the older system, teach our youth the dignity of labor, and familiarize them with the tools and methods of the workshop. The introduction of such a course it is believed by very many of our citizens would work the final democratization of our schools, and counteract the tendency, on the part of many who graduate from our system, to regard manual labor with disfavor. The actual result of our present system is only too often to dissatisfy our young men and women with modest occupations and with laborious and difficult trades. They prefer, in too many cases, to be anything in preference to being artisans, and their education in those cases where it causes them to disdain the trades of their parents, as it does in many instances, is possibly a harm as much as a benefit. It is thought that these tendencies may be met and overcome by the introduction of a simple course, which shall train the scholars in the use of the hand tools, and familiarize them with all the simple mechanical processes; teaching them no trade, but teaching them the alphabet of mechanism and value of the trades. Such a course need not even necessarily be the foundation of any trade whatever, but it should be the part of such a general discipline as shall be justified on the grounds of its educational value, just as drawing as now taught is justified. It is impossible—and the opinion prevails generally in the Board that it would be inadvisable—to introduce trade schools as such; but it is thought by some of the commissioners that we might teach the rudiments of mechanics, just as we do those of letters, giving the pupils a knowledge of fundamental mechanical principles, and affording them sufficient opportunities of practice to become acquainted with the uses of the different kinds of tools, which, notwithstanding the universal introduction of machinery, are still the basis of all mechanical industries. The committee having this matter under consideration has not yet reported its conclusions to the Board, but it is foreseen, should the Board determine to act upon the proposition, that very serious difficulties will have to be overcome, not only in arranging a series of workshop lessons which shall have a general educational value, but in meeting the cost necessarily incident upon such change in the curriculum.

The following extract from the report of the subsequent year* shows that the subject was being seriously considered, and also indicates some of the causes for delay in action.

TECHNICAL OR INDUSTRIAL EDUCATION.

The interesting questions connected with the proposition to introduce into our schools some of the branches of the new system of industrial education have not been forgotten by the Board. During the year 1884 the subject was assigned to a special committee, under whose care an investigation was commenced and carried forward, and important papers were received from various sources, both domestic and foreign, including reports relative to some of the technical schools of Germany, France, Sweden, and Great Britain, the chairman of the committee, Commissioner William M. Ivins, devoting a great deal of time and attention to the subject. Early in the year 1885 his resignation as a member of the Board was tendered, and the vacancy on the committee was filled by one of the commissioners whose interest in the subject was deep and earnest, but whose duties prevented the perfecting of any plans for adoption by the Board.

Another reason for delay in grasping the enterprise and giving it a thorough test is the permanent consideration arising from the limitation of means placed at the disposal of the Board for its various uses. The great utilitarian question of economy and the enforced necessity of keeping all the expenditures of the system at minimum figures constantly confronts the Board, and it is but a commonplace conclusion that, however admirable might be any scheme in the direction of practical education, it would be inexpedient to attempt it without sufficient resources to give it a satisfactory test on a scale and with a period of time commensurate with the wants of so large a city as New York.

It must not be forgotten that the design of our system is that it should he impartial in all its features—providing equal opportunities for all the children, equal advantages, and equal privileges. Hence the plan adopted, to be effective, should be so organized as to be free to all the children of our schools whose conditions would permit them to devote the time necessary for the purpose of such instruction, and such plan must be the result of experiment.

The subject is under careful advisement, and will no doubt eventually receive the matured consideration and action of the Board.

AN ADVANCE SUMMARY OF THIS REPORT.

The above extract is from the latest official report received at this Office up to the present time, but the following evidently authorized announcement to the public through one of the leading journals of that city, shows that the subject continues to occupy the attention of the school authorities and indicates probable action, so that it seems reasonable to expect that, within a few months, New York will be added to the list of American cities and towns which offer to their public school pupils training in various forms of industrial education.

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*Forty-fourth Annual Report of the Board of Education of the City of New York, for the year ending December 31, 1885. New York: Hall of the Board of Education, corner of Grand and Elm streets. 1886. Pp. 291.

It is announced * that the "Committee on Course of Study," who have been investigating the subject for the past year, are now ready to make a report on the whole subject of industrial education to the Board of Education.

This committee consists of the following members: Commissioners Charles L. Holt, Miss Grace H. Dodge, William Wood, De Witt J. Seligman, and E. J. M. Tamsen.

HOW THE REPORT WAS MADE.

City Superintendent John Jasper was directed last autumn to examine both the European and American methods of manual training. Assistant Superintendents Thomas F. Harrison and James Godwin personally inspected the leading American schools. The results of the investigations made by the office of the Superintendent were embodied in a report by Superintendent Jasper to the committee, who will submit the report, as revised by them, to the Board of Education. Action on this report will, it is said, probably be taken by the board at their meeting in October, 1887.

From the brief summary given, this report would seem to embody a very thorough study of the subject, and I regret not being able to obtain a copy of it in time for use in this volume.† The committee evidently appreciate very fully the situation of school children in large cities, which demands that some provision for industrial training shall be provided in schools, since the changed conditions of society, in a vast majority of instances, absolutely prevent any such home training of the children as was almost universal a few decades ago.

They note the gap, at present existing, between the kindergarten training in the lowest primary grades and the Manual Training High Schools, and propose to adopt some forms of like instruction for the intermediate grades, thus linking all the schools in a continuous progression of industrial studies, just as they are now connected in the literary studies.

The following are some of the conclusions of the committee as given in this abstract of their report :

> First. That the introduction of what is generally known as manual training would be an improvement to our present course of study. * * *
>
> Second. That manual training is admissible into our schools only as a means of

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* See New York Tribune of July 4, 1887, page 8, "Report of the Committee on Course of Study to the Board of Education."

† If received in time it will be further quoted from in Appendix P.

general, not special, education. The industries of this metropolis are too diverse, the sentiment of equality is too strong, the ambition to rise is too general, to allow of any scheme that shall designate certain pupils for particular walks in life.

They further urge that this training should be open to all children and not to a few selected pupils. They oppose sending pupils to special buildings, and also object to the establishing of a new class of schools, differing in this from the school authorities of Baltimore and Philadelphia. While up to the higher grades of the grammar schools and to the high school, there seems little question that this training had best be given in the regular school building, yet, when it comes to the older boys, and to the use of steam power, a separate building, at least, seems essential. They propose instruction in sewing and cooking for girls, modelling in clay, construction work with pasteboard, and drawing to scale for all, and use of wood-working tools for boys. Time is to be gained for the new studies by improved methods of teaching and by revision of courses. The introduction of the new studies must be somewhat gradual. They propose special teachers as directors of the new studies and one assistant superintendent to supervise these studies in the primary and grammar grades.

In the article containing this summary Mr. Frederick W. Devoe is mentioned as one of the earliest advocates of the plan, having urged this movement on the board several years ago. President Simmons, William Lummis, W. A. Cole, and Henry L. Sprague are named as members of the board who strongly favor the speedy practical introduction of this new training in the schools.

Mr. Charles L. Holt is mentioned as having given special attention to an estimation of the probable cost of making the necessary changes for putting this work in the schools with the following result :

With regard to the expense of introducing these studies the following estimate is made for the first year:

Workshop outfit, 60 departments, at $300	$18,000
Kitchen outfit, 60 departments, at $200	12,000
Workshop supplies, 60 departments, at $50	3,000
Kitchen supplies, 60 departments, at $100	6,000
Sewing supplies, 60 departments, at $50	3,000
Construction supplies, 240 departments, at $25	6,000
Teachers' salaries	65,000
Assistant superintendent's salary	3,500
Preparing 120 rooms, at $100	12,000
Total	128,000

In succeeding years the workshop and kitchen outfit could be maintained at an expense of 10 per cent. of the original cost. The supplies and salaries being the same, the cost of the second and succeeding years would be $89,500. To introduce the general plan into all the schools, and the workshop and cooking into only one-third of the grammar schools, would make the first year's cost $54,500, and the second and succeeding years $41,500.

While the accounts of the other places here given relate to the actual working of the new experiments, and in this connection the city of New York, not having yet begun this work other than by the teaching of drawing, would seem thereby to be properly excluded from this list; yet, from another point of view, the preliminary steps here recorded are most significant and noteworthy. If the claims of the new industrial education are so valid as to justify such serious consideration by the educational authorities of the great city of New York, where the aggregate cost of the first introduction of the new studies must be very great, certainly it becomes an imperative duty for the school authorities of all other towns and cities to investigate these claims for themselves. Hence the example of New York is well worthy of record here.

In this connection it is of interest to note that in his last annual report President Hunter, of the New York City Normal College, recommends that Manual Training and Industrial Education should be taught in the college. Some years since he had recommended that they be made "elective studies"; as this suggestion was unheeded, his present recommendation that they be made required studies indicates that in his judgment there has been a decided advance in public opinion concerning their importance.

He fully realizes that no new study can be successfully introduced in a system of public schools unless in the hands of competent teachers, and he now proposes that, at the end of the second year in the Normal School, the pupils should have the choice of one of two regular courses; one the present literary course, the other a course in manual and industrial education. In his recommendations it is clear that President Hunter well understands that a thorough knowledge of Industrial Art Drawing is the only sure basis for any further advance in Industrial Education.

It will be remembered that when the educational authorities of Massachusetts first sought to introduce Industrial Art Drawing in the public schools it was soon seen that the only possible way to accomplish this was to first instruct the teachers in the new study, and in order to effect this, not only was the study put in all the State Normal Schools, but a special Normal Art School for the training of thoroughly accomplished teachers of Industrial Art Drawing was established, while in addition special teachers were sent over the State to meet the Teachers' Institutes, or, in the cities, to the city teachers, and instruct them in the new study.

Principal Hagar, of the State Normal School at Salem, Mass., has successfully followed this precedent in applying it to the new movement for Industrial Education, and for some years has had his pupils, girls as well as boys, regularly instructed in Manual Training; the girls showing, it is said, surprising aptitude in wood working, light carpentering, and wood carving, which last, as was long since shown in Cincinnati, is readily acquired and practiced by women. When a change is meditated in public school methods the question of "Who will teach the teachers?" becomes as pertinent as the old Roman's satirical query, "Quis custodiet custodes?" ("Who will watch the watchmen?")

NEW JERSEY.

If a general interest in all matters relating to technical training and to the diffusion of a knowledge of the varied applications of art to industry could be safely predicated of the people of any of the States in the Union, by reason of the great importance of their manufactures, it would seem that New Jersey, whose cities are vast workshops, great hives of industry; whose long-established ceramic industries far outrival in amount those of all the other States, and whose silks, jewelry and watches, are known the world over; would not be last in the list.

The late General George B. McClellan, when Governor of the State, fully appreciated the importance to the community of thorough technical, industrial, and artistic education, and endeavored in many ways to promote it; by his messages, by beginning a collection in the State House at Trenton for a museum of ceramics, and by public and private utterances.

At the Centennial, the beautiful results of the alliance between art and industry, as shown in the ceramics of Europe and Asia, were manifest to all; as was equally the excellence of the quality of the crockery of Trenton, which latter was, however, for the most part, bare of art. A notable advance in these respects has since been made by some of the manufacturers of Trenton, as is recorded in Part I.

Much interest was early shown in introducing industrial art drawing in the schools of the State in many places, under the wise fostering of State Superintendent Apgar, while the efforts made by Mr. E. A. Spring, of the Eagleswood Art Pottery, and Art School at Perth Amboy, to introduce modelling in clay in connection with drawing in schools, are familiar to the educators of the country.

The interest now felt in the movement for further industrial education in the schools is shown by the following extracts from the latest published report of the Hon. Edwin O. Chapman, State Superintendent of Public Instruction,* and by special reports showing what has been done in several cities and towns:

TECHNICAL SCHOOLS.

The subject of industrial education is receiving much attention, and it is hoped that some form of manual education will soon be attached to our public school system in all of our larger cities.

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* "Annual Report of the Board of Education and the Superintendent of Public Instruction of New Jersey, with accompanying documents, for the school year ending August 31, 1885. Trenton, N. J.: John L. Murphy, State Printer, 1885." Pp. 205.

In 1881 the Legislature enacted a law providing that whenever, in any city, town, or township, there should be raised, by subscription or otherwise, a sum not less than $3,000, for the purpose of establishing a school or schools for industrial education, the State should appropriate an equal amount, and thereafter in each year the State should appropriate a sum equal to that raised by the locality in that year for the same purpose. It provided that each school so established should be under the supervision of a board of trustees, consisting of the Governor, two persons selected by the State Board of Education, two selected by the citizens or associations contributing, two by the local board of education, and one by the common council or other local governing body.

As yet but one school has been established under this act, that in the city of Newark. The trustees are Governor Leon Abbett, president (*ex officio*); Edward Goeller, vice-president; William N. Barringer, secretary; Augustus F. R. Martin, treasurer; and Edward Weston, George H. Phillips, Moses Bigelow, and James F. Connelly. The director is Charles A. Colton.

NEWARK TECHNICAL SCHOOL.

No official report has yet been made by the trustees, but the following extracts are taken from a circular issued at the beginning of the present year:

"It is not expected that the students will become experts in any of the branches taught; but if at the end of the course they shall have been trained to better habits of thinking, closer methods of observation, and a greater ambition to excel in the various employments in which they are engaged, having thus developed into workmen of greater skill, the friends of the school will have accomplished the object designed in its establishment.

"ADMISSION.

"Applicants must not be less than sixteen years of age, and must be residents of Newark, of good moral character, and well grounded in the studies of a grammar school education, viz; spelling, reading, writing, grammar, geography, arithmetic, and history of the United States. Certificates of graduation from any grammar school in Newark will be accepted as the requisite qualifications for admission. Applicants who have not graduated at a grammar school must pass an examination equivalent to the above.

"COURSE OF STUDY.

"The course of study will require three years, or possibly four, a school year lasting six months, viz: from October to the following April, or longer if deemed advisable.

"By permission of the trustees, students not desiring to take the full course may take a special course in any of the branches taught.

"The sessions of the school will be five evenings in the week, viz: from Monday to Friday, inclusive.

"The hours of each session will be from 7.30 to 9.30.

"The first full course will begin about February 9, 1885.

"The studies will include algebra, geometry, trigonometry, descriptive geometry, physics, chemistry—theoretical, descriptive, and applied—and free-hand and mechanical drawing.

"A well-equipped room for drawing will furnish ample opportunity for practice in this branch.

"The best models will be used that can be procured, and special attention given to the training of students, so that they may give a proper representation of an object on paper, and prepare themselves for draughtsmen.

"The department of chemistry and physics will be well supplied with the necessary apparatus.

"Special instruction will be given in the nature, care, and proper use of tools.

"Tuition will be free.

"Students must provide themselves with text-books and drawing materials.

"TEXT BOOKS.

"The following text books will be used: Wells' Algebra, Davies' Legendre's Geometry, Church's Descriptive Geometry, Elliot and Storer's Chemistry, Gage's Elements of Physics."

The following statistics have also been furnished:

"Number of applicants for Newark Technical School, February 9, 1885	156
"Number of applicants admitted	106
"Number of students on the roll February 23	96

"*Occupations represented.*—Machinists, 39; clerks, 20; book-keepers, 5; carpenters, 3; painters, 3; draughtsmen, 3; electricians, 3; plumbers, 2; printer, 1; engraver, 1; locksmith, 1; grocer, 1; janitor, 1; harness-maker, 1; pattern-maker, 1; jeweller, 1; tinsmith, 1; dyer, 1; out of business, 8. Total, 96.

"Average number of hours per day employed	10
"Graduates of grammar schools	48

AGES OF STUDENTS.

"Between 16 and 17	36
"Between 18 and 19	31
"Between 20 and 21	14
"Between 22 and 25	11
"Between 26 and 30	3
"Over 30	1
Total	96

"Oldest student, 42.

"Eight of the students are married."

NEWARK, NEW JERSEY.

The introduction of industrial education other than drawing in the city of Newark seems as yet to be limited to two primary girls' schools, opened for very poor children, and to the Free Night School for young men, the first, and as yet the only one in the State, organized under the law of 1881 for the establishment of "technical schools." I am indebted to the courtesy of Mr. William N. Barringer, Superintendent of City Schools, for the following statements, and both to him and to Mr. Charles A. Colton, E. M., principal of the technical school, for copies of the catalogue of the school. Under date of June 1, 1887, Mr. Barringer writes:

> We have two industrial schools in our city, the James Street and Clover Street Schools. In James Street School the average enrolment is 158; average attendance, 129. In Clover Street, average enrolment is 113; average attendance, 91.
>
> In relation to these schools to which you refer, I can say, they are primary schools for a class of children who receive a dinner and such other help in the way of clothing as can be furnished them.

A society of benevolent ladies furnish the dinner and clothing. The pupils are taught to sew, cut, and make plain garments for themselves and the children of indigent parents.

The children are very apt in the use of the needle and scissors. These schools are always full, and the children seem to enjoy their work very much.

The course of study is the same as pursued in the other primary schools of the city. The classes submit to the same examinations as other schools which give the entire time to study.

I am satisfied that some of the time now given to intellectual pursuits can be given to manual exercises or work without any loss to the progress of pupil.

THE NEWARK TECHNICAL SCHOOL.

This school, situated at No. 21 West Park street, Newark, was described in the first circular issued, largely quoted from in the report of State Superintendent Barringer, as given in the preceding pages—

As the outgrowth of a feeling on the part of the manufacturers and business men of the city that young men and mechanics engaged in the factories and shops should have some elementary knowledge of the principles of technical science.

The following account of the school is from the latest official report made by the Director to the Board of Trustees:*

At a meeting held March 8, 1879, by the Board of Trade, a committee on technical education was appointed, consisting of Thomas B. Peddie, William H. Kirk, and William Foster Dodge.

The earliest movement to assume a practical form towards the establishment of a technical school in this city occurred at a meeting of the Board of Trade, held April 13, 1881.

A law had just been passed by the Legislature of the State granting to any city in the State an annual appropriation of from $3,000 to $5,000 for the establishment of schools for industrial education, provided that city raised an equivalent amount. The law also provided for the appointment of boards of trustees for the management of such schools.

An unsuccessful effort was made at this meeting to secure the requisite sum.

Nothing further resulted until the spring of 1884, when the whole amount, $5,000, was subscribed.

Early in December of that year the board of trustees was appointed, according to the provisions of the State law, as follows: His excellency Leon Abbett (*ex officio*), president; William N. Barringer and Moses Bigelow, appointed by the State board of education; A. F. R. Martin and Edward Goeller, appointed by the city board of education; Edward Weston and George H. Phillips, appointed by the board of trade; James F. Connelly, appointed by the city council.

This board elected Charles A. Colton, recently professor of chemistry in the Rose Polytechnic Institute, Terre Haute, Ind., to the position of director of the Newark Technical School. He entered upon the duties at once, and the school was opened February 9, 1885, with one hundred and nine students.

DESIGN OF THE SCHOOL AND COURSE OF STUDY.

The school is now in the third year of its existence, and considering the limited means at its disposal, has been very successful.

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* Newark Technical School, by Charles A. Colton, E. M., Director. Published by order of the Board of Trustees, April 1, 1887.

There seems to be a mistaken idea on the part of many as to the plan of the school. It is not a school for teaching trades. It is not a school of manual training. A school of either kind would require a larger amount of money than the trustees have at their disposal. Further than this, the classes of men the Technical School is designed to reach are abnormally developed, it might be said, in the line of manual training, and it is the mental training which is necessary to round out the complete man. The latter the Technical School designs to give. No attempt is made to graduate superintendents, engineers, or experts of any kind, that being outside of the plan of the management. The wish and expectation is, that when the students have completed their course they will be better workmen than when they commenced.

The regular course of study comprises instruction in mathematics, drawing, chemistry, and physics, and requires four years to complete.

Applicants for admission are required to pass an examination, more for the sake of finding out what they know than to admit only a favored few. The management find this necessary in order to ascertain the kind of material they have to work with. For those who are not able to pass the examination a preparatory class has been added to which applicants are admitted without an examination.

In laying out a course of study for any class of pupils, the ultimate object must be kept in view, even though it is reached in an indirect way; and where the object is the greatest good to the greatest number, individual desires and peculiarities of mental capacity cannot be given too much importance. The trustees of the Technical School have wisely chosen not to attempt too much at the outset, and planned their course so as to embrace but few subjects. The few that have been selected are well calculated to train the mind in methods of deductive and inductive reasoning, which, taken together, complete the method of true thought.

MATHEMATICS.

This subject consists of arithmetic, algebra, geometry, and trigonometry, which follow each other in the order given.

* * * * * * *

PHYSICS AND CHEMISTRY.

Physics and chemistry, both experimental sciences, were introduced in the course as being of more value for the object in view than any of the natural sciences.

* * * * * * *

DRAWING.

The course in drawing consists of free-hand and mechanical. All students are obliged to study free-hand before mechanical drawing, it being considered essential that, in order to make a good mechanical drawing, a person should be able to make a fair sketch. For those who do not intend to be draughtsmen the course in free-hand is of great advantage, in enabling them to express ideas graphically to others, which can be better done by this means than by words.

Many applicants seem to have a decided aversion to taking this part of the course, especially if they have no taste or apparent talent in that direction and do not expect to follow any mechanical pursuit. But there comes a time in the life of every man, no matter what his business is, when he wishes to express an idea to another which can be better understood and in less time if illustrated by a sketch than described in words.

METHODS OF INSTRUCTION.

The methods of instruction followed in the Technical School do not differ materially from those pursued elsewhere. Mathematics is taught by demonstrations at the blackboard and individual work at the desks. Physics and chemistry are taught by lecture, illustrated by experiments showing physical and chemical phenomena, suites of specimens showing raw materials and manufactured products in technical processes and lantern views. The work in this department is not as complete as it might be if laboratory work could be included. A small laboratory is provided for the use of the director, where general preparatory work is done. This is too small to accommodate a class of students. The main object in having the students perform laboratory work is to train them to observe phenomena for themselves, draw their own inferences, and to acquire a certain degree of dexterity in manipulation. The department of physics and chemistry is fairly well equipped with apparatus, and more will be provided as it is found necessary or desirable. Edward Weston has been a great friend to the school in many ways, particularly in loaning his private apparatus.

DRAWING.

Drawing is taught the first year from the "flat" or copy. In the second year wooden models and plaster casts serve as subjects, the sketch being executed with crayon and stump and without artificial aid. The collection of plaster casts is well selected, and includes half-size figures of Venus de Milo, Apollo Belvedere, Discobalus, the Dancing Fawn, the Fighting Gladiator, the Dying Gladiator, busts of Ajax, Napoleon, Laocoon, Sabrina, Julius Cæsar, masks of King Agrippa, Vitellus, and Augustus Cæsar, besides casts of hands, arms, feet, leaves, flowers and fruit. From these the student obtains a good idea of proportion by training the eye to sketch objects from any point of view and without measurement. Indirectly, these casts serve another purpose. The student cannot have these before him many times before he asks who the figures represent. The majority of our students have never heard of the characters in mythology and many of the historical personages represented by these, and often a new inspiration is developed, followed up by a search for information which would probably never have occurred to them otherwise, and which may lead to a considerable degree of literary culture.

In the third and fourth years the students are taught mechanical drawing, being at first required to make a drawing of some simple model, showing three different views, then a drawing of the parts of a machine, and finally the complete machine put together, from data which they already have and not from the machine itself. These drawings are all working drawings, and such as could be used in any shop.

The tables used for mechanical drawing are portable, adjustable to any height or angle, and revolve. Each student has a table to himself.

EXAMINATIONS.

Examinations are held the third week in December and the last week in the year. No fixed percentage is required to pass an examination. Great injustice is often done to students where the system of requiring a fixed percentage in order to pass an examination is in vogue. In schools for young children it may be necessary to have a fixed standard, as they are hardly mature enough to realize the object of study.

In the Technical School no one of the instructors has it in his power to decide whether a student should be promoted to a higher class or not. Each instructor reads the examination papers of his own class, and hands in a report of the results, but the question whether a student shall be promoted or not does not depend entirely on his examination paper. His work through the entire year is discussed by the faculty, and a vote is taken as to his fitness to pass into a higher class. A student is sometimes advised, for his own good, to take the year's work over a second time.

Many instances of the evils arising from having a fixed percentage to be obtained by a student in an examination, the result of this determining entirely his fitness for promotion, might be cited.

Take the case of two students, one quick to learn, and the other being a "plodder." Suppose the percentage required is 75. The first student gets 75 and the other 74.8 The first student passes and the other does not, simply because he lacks two-tenths of 1 per cent. The second student in all probability has worked the harder of the two, and his general work through the year shows him to be faithful and painstaking. The first student, knowing his ability to acquire facts if he applies himself, works indifferently until a short time previous to the examination, when he "crams."

This is a very common occurrence, and the students get the notion of simply studying to get 75 per cent., rather than to learn something.

The students of the Technical School are strongly urged to study to know rather than to "pass." There is too much "passing" nowadays and too little knowing.

THE BEGINNING OF A LIBRARY.

To further increase the usefulness of the school the following periodicals are regularly received and kept on file, viz: *Engineering*, *The Engineer*, *Chemical News*, *Electrician and Electrical Engineer*, *Popular Science Monthly*, *Scientific American*, *Scientific American Supplement*, *American Machinist*, and *American Architect*. A set of Appleton's American Cyclopædia and other works of reference are also on the shelves. These are the nucleus of what can be made a valuable reference library to this city. The office of the school serves the double purpose of reading-room and the place for the transaction of all business in connection with the school. For the requirements of the former it is quite inadequate, and unless a room of proper dimensions can be had for the purpose, the use of the books and periodicals will be very limited. During the summer vacation the reading-room is open one evening a week. This city is sorely in need of a reading-room, which shall be free to every one and open at all times.

If the trustees of the Technical School had the means, there is but little doubt that they would endeavor to supply this lack of reading-room facilities. The school is patronized by the class of men who are to be the workmen of the future, and is the proper agent for administering the affairs of such a reading-room and reference library.

A MUSEUM SUGGESTED.

A collection of specimens illustrating chemistry as applied to arts and manufactures is being made, particular attention being given to local industries. A technical collection of this character will in a few years form a museum of itself, which can be of service to the whole community as a place to visit, if nothing else. * * * The trustees have expended for—

Furniture and fixtures	$1,200
Library	350
Repairs and alterations	1,800
Apparatus	1,300

The annual expenses, including salaries, rent, fuel, light, etc., amount to about $8,000.

Additional apparatus has to be provided each year, and this will be a continuous source of expenditure for some time to come.

There are five instructors, including the Director. The latter devotes his whole time to the interests of the school.

The number of students in the school now is as follows:

Preparatory class	44
First year class	66
Second year class	28
Third year class	26
Total	164

STATISTICS FOR 1887–'88.

Preparatory class	81
First year class	98
Second year class	37
Third year class	22
Fourth year class	20
Total	258

LIST OF OFFICERS FOR 1887–'88.

BOARD OF TRUSTEES.

His Excellency ROBERT S. GREEN, president (*ex officio*)
EDWARD GOELLER, vice-president.
WILLIAM N. BARRINGER, secretary.
MOSES BIGELOW, treasurer.
A. F. R. MARTIN.
GEORGE H. PHILLIPS.
EDWARD WESTON.
GEORGE W. KETCHAM.

INSTRUCTORS.

CHARLES A. COLTON, E. M., director. instructor in chemistry and physics.

HENRY T. DAWSON, Ph. D., FRED W. FORT, A. M., ALBERT B. WILSON, instructors in mathematics.

JAMES KINSELLA, W. E. PLIMPTON, instructors in free-hand drawing.

ALBERT W. JACOBI, instructor in mechanical drawing.

A SCHOOL FOR WORKING MECHANICS.

Under date of June 7, 1887, Director Colton, in forwarding copies of catalogues, writes as follows in relation to the word "technical," which is here quoted as bearing upon previous statements of the present writer on the confusion of terms used in reference to the several forms of industrial education:

> In regard to the use of the word "technical," I agree with you that the significance is somewhat confusing, and especially as it seems to broaden.
>
> As I understand it at present, the idea involved is to unite school and shop so that handicraft may in some way be associated with theory. One of the conditions of admission to the Newark school is that the applicant must be at work during the day. It is essentially a school for working people.
>
> To be sure, the school is not of a high grade, and has no shop in connection with it; still I do not see why the term "technical," according to present ideas, cannot be applied to it with more propriety than the term "university" to some of our infant colleges.

That the present system of public school education is at fault I am firmly convinced, and it will not be many years before radical changes will be made, as the outgrowth of our present floundering after the right thing.

In regard to the use of the "flat" previous to drawing from cast or model, our experience has been that it is better to give the student something in which the idea is wrought out at first, that he might acquire a certain degree of dexterity in the use of the pencil, and some accuracy in the proportions of parts.

Whether this would be necessary with students who have acquired habits of study and thought, I cannot say. Our students are mostly mechanics, who don't know how to study or think systematically.

At present this is our ultimate object. If we can carry this along successfully, it is hoped that we may receive the co-operation of the public school system here, and add a department of manual training.

THE MONTCLAIR TECHNICAL SCHOOL.*

Though not established under the act of 1881, a technical school has been in operation for three years in Montclair, directly attached to the public schools, under the supervision of the district board of trustees. A committee was appointed in May, 1881, to investigate the subject, but it was not until May, 1882, that the voters, in school meeting, decided that "it is the opinion of the people of this school district that the pupils in the grammar schools, from twelve to fourteen years of age, be given opportunity to learn the proper use of wood-working tools under a competent instructor, and that a change in the studies and recitations of such pupils as elect to do this work be made, so as not to interfere with the regular studies of the school.

During the summer vacation a room in the school house was fitted up with plain benches and tools, and a special teacher was engaged. Work was begun in this room in October with a class of about fifty boys, taken from the higher grammar classes. While the boys were in the workshop, the girls of the same classes were given lessons in needlework, etc.

REPORT OF PRINCIPAL SHAW.

In February, 1884, the instructor, Mr. John V. Shaw, reported to the trustees:

"We have now in the technical school four classes, each receiving two lessons, of one hour, per week. Two of the classes are learning the use of carpenters' tools, the others taking rudimentary lessons in carving. The average attendance in the carpentry classes is eighteen and twenty, respectively; that in the carving, sixteen. The plan of instruction is the same as that of last year, and is substantially as follows: In the first lesson the pupils were taught the names of the various tools and their uses explained. In the second, the class was supplied with blocks, which were spaced off, and practice given in striking straight blows with the hammer. In the several succeeding lessons practice was had in driving nails, and in the use of planes and saws, in accurate boring with brace and bit, also in lining with chalk-line, and in the uses of gauges, mallet, and chisels; then followed planing to gauge mark and planing boards out of "wind," practicing in tool sharpening, etc. These exercises occupied the lessons to the sixteenth, inclusive, after which pupils were given practice in making mortises and tenons, and then taught to make a frame with halved corners. This was followed by instruction in the manner of making dovetails; also, in making frames with mitred joints, in the construction of which no mitre-box was allowed, the mitres being struck out by measure. They were next instructed (drawing on blackboard) in the manner of laying out and constructing a box with corners dovetailed together. Then came practice in making frames with locked joints, or with corners halved, and the ends of wood projecting. We are now engaged on the last frame in the course of lessons, the joints of which are to be mortised and tenoned together.

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*From Report of State Superintendent of Public Instruction of New Jersey for 1885.

"In addition to this work, the carpentry classes have assisted me in constructing sixteen tool-boxes for the use of the carvers; they have also made six frames of a somewhat ornamental character for mottoes, intended for the walls of the work-room. The work of the mottoes was done by the girls of the industrial classes.

"With regard to the conduct of the boys, it may be stated that we have no incorrigible ones, but some who require restraining influence, and who, after a short departure from strict discipline, can easily be brought again to perfect order. The percentage of boys who seem to have a natural aptitude for mechanical operations exceeds that of last year. We have some not over twelve years who show a proficiency beyond others of sixteen, and are giving evidence of superior ability. The ardor with which the boys continue to enter upon and pursue their studies is to me still a matter of surprise. With very few exceptions, there seems no diminution in their former eagerness to commence their work or in their unwillingness to desist when the lesson hour has expired. Some so love their work that they have requested me to let them practice a short time during the noon hour. A number have a fine artistic taste, and desire to produce beautiful objects. I have employed these in gilding the scroll and ornamental work on the motto frames, in which occupation they have been much interested, and I may say delighted. This artistic work has been done after the school hours, so as not to interfere with any of their studies."

In February, 1885, the instructor reported as follows:

"In carpentry the work has been nearly the same as during the first six months of the preceding two years, namely, the first lesson was devoted to teaching the names and uses of tools; in the second, some practice was given in nail-driving and striking straight with the hammer. In the remainder of the lessons, up to the present time, the boys have been employed in making the various joints used in carpentry, such as the mortised, halved, mitred, dovetailed, etc., the joints forming the corners of frames. They are now about to commence a box nearly two feet long, the making of which they have looked forward to as something to be desired. In the carving classes, the pupils were for a time employed on straight-line carving. This work, although intended as an initiatory step in tool-handling, was put in the form of a panel. After some practice, they were advanced and employed on designs with curved lines, forming scrolls and leaves. They are now engaged upon their fifth design, which is put in the form of a small wall pocket, the upper portion showing a bunch of grapes with leaves, the lower a basket of fruit. I shall during the remainder of the year, depart from the course pursued last year, when the work was all in form of panels, and let the pupils work on articles which may be in some degree useful, as brackets, picture frames, inkstands, etc, This, while it will afford equally good practice in tool-handling, will render the studies of the boys more interesting, and give a greater zest to their labor. With regard to the proficiency the boys have made in the carpentry classes, I think that it is about the same as during the first six months of last year. I find the same difference in their natural aptitude—some taking to the use of tools almost intuitively, others learning it with much difficulty. In the carving classes the percentage of boys showing marked ability seems to be greater than that of last year; indeed, I have been somewhat surprised at the degree of skill some have exhibited during the comparatively short time they have been at work, and also at the unabated enthusiasm shown by the members of both the carpentry and carving classes. In the latter there are some of marked ability, showing a persistency, skill, and love for their work that is quite remarkable in such young persons. In some cases I have permitted them to work after hours, as they seemed to have a strong desire to pursue their studies."

It is the conclusive testimony of the instructor and trustees of the Montclair School that the industrial work of the pupils has not interfered with their regular class-work or impeded their progress in their regular studies.

MONTCLAIR, NEW JERSEY.

In addition to the foregoing reference in the report of the State Superintendent, the following extracts from the report of Mr. Randall Spaulding, the superintendent of the Montclair Schools, to the Board of Trustees,* under date of July 1, 1886, give an account of the industrial training of the Montclair boys and girls, and the history of the Industrial School, with its mechanical courses in detail. A letter, since received from Superintendent Spaulding, brings the record of this interesting experiment to the present year.

This example of what can be done by enterprising educators and citizens in a single small town is of practical value to the numerous towns and large villages throughout the country. The example of Toledo, which city for this purpose was presented by a wealthy citizen with buildings and machinery at a cost of over $100,000; or of Baltimore, where the large appropriations necessary to establish a first-class manual training school were made from the public school funds, is rather discouraging, than encouraging, to the citizens of smaller or less fortunate places, desirous of securing for their schools like advantages. So, for the large majority of American communities, a statement of what the citizens of Montclair, N. J., and a few other towns in different States have done, is of immediate practical interest and value. It is for these reasons that, so far as possible, the courses of study and the items of expense in beginning these experiments are given in detail.

In his report of July, 1886, Superintendent Spaulding says:

INDUSTRIAL TRAINING.

Details of the work will be found in the special reports. Four years have sufficed to fairly test this branch of instruction, and it is safe to say that its importance has steadily grown in the estimation of all who have carefully watched its progress. Each child in the second and third grammar grades receives instruction in hand work two hours per week. No attempt is made to teach any trade, and all thought of the market value of the product is excluded from the workshop. While the work has, doubtless, great utilitarian value, its chief value is disciplinary. The eye and the muscles of the hand are recognized as worthy of careful training. This training, involving as it does mental activity, has a mental value in developing practical judgment and executive power. It is a noteworthy fact that public sentiment in the country at large is rapidly coming to recognize the value of industrial training.

It is my opinion that this training could be profitably given to pupils at least three years younger than those who now receive it. The kind of work should be of course quite different, requiring less muscular strength.

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*Course of Study of the Montclair Public Schools, District No. 8, with report of Superintendent and an account of the Industrial School. July 1, 1886. Montclair, N. J.: Montclair Times Steam Print. 1886. Pp. 22.

INDUSTRIAL SCHOOL.

At a school meeting, held on May 23, 1881, a committee was appointed to investigate the subject of industrial or technical schools, and to report at the next annual meeting. On May 22, 1882, after hearing the report of the committee, the trustees were authorized to give opportunity to the pupils of the grammar school, from twelve to fourteen years of age, to learn the proper use of wood-working tools, and $1,000 was appropriated for the purpose.

Accordingly, a competent instructor was secured;* a room in the school building was fitted up with carpenters' benches, tool racks, tool boxes, and twenty-five sets each of carpenters' and carvers' tools, the tools, benches, and fitting costing about $350.

On October 1, 1882, the school was opened. The second and third-grade grammar classes (ages from eleven to fourteen) were selected. A course of work was laid out. When it was possible to find anything written on the subject it was purchased and used as text book. While the boys were in the workshops, the girls of the same classes, under the guidance of their regular teachers, received lessons in needlework, embroidery, and plain sewing. They designed and drew patterns, then transferred the same to goods. After this they worked out the patterns with colored woolens or silks.

The average attendance each year in the carpenter shop has been about fifty and in the sewing classes about forty pupils. *The time* devoted to the work has been one hour twice a week, in school hours. Arrangements were made so that the usual school studies were not interfered with. At the close of the year the pupils who have attended the Industrial School have passed satisfactory examinations in their regular school studies and maintained their standing in their respective classes. They appeared not to have lost any ground, but rather gained.

The expenses for starting and carrying on of this work for the several years have been as follows:

First year	$725 86
Second year	599 34
Third year	582 51
Fourth year	681 19

The teacher's reports for the school year, ending July 1, 1886, are as follows:

Carpentry class, average daily attendance	30
Carving class, average daily attendance	26

Pupils draw their own designs on paper or on blackboard before beginning work. Boys in carpentry class have finished the thirty lessons in the course laid out, making altogether one hundred and twenty different pieces. Boys in carving class have had practice in panel work—have made wall brackets, book racks, inkstands, card racks, picture frames, etc.; in all seventy pieces.

Boys show great diversity of talent, some becoming in a little time quite expert in tool-handling, while others find it much more difficult. They show much enthusiasm and love for the work; many inclined to visit the shop during play hours to work. Rigid discipline is maintained at all times, but the teacher has scarcely any trouble or annoyance. Each boy has a particular place assigned to him and always uses the same set of tools, and is held responsible for keeping the tools in order and for returning them to their proper places at the close of the lesson.

SEWING CLASSES.

Girls in second grammar class, average daily attendance, 27; average age, 12; taught plain sewing. They *first* measured and cut from the goods selected an *apron; second*, an *underwaist*, either tight or half fitting, each pupil selecting her pattern and muslin, then cutting, basting, and fitting the same, and after its completion working the button holes; then they were employed, *thirdly*, on *flannel skirts*, each article having an original design embroidered on the hem, using Kensington stitch.

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*Mr. John V. Shaw.

Girls in third grammar class, average daily attendance, 30; average age, 11; taught to use thimble and needle, making splashers, tidies, doylies, bureau covers, and table scarfs on *butcher's linen.* Each pupil selected her pattern, then stamped the goods and outlined the pattern with red or black cotton. The stitches taught were stem stitch, split stitch, and French knots. Each article was fringed and knotted. Then felt goods were used, and the same work was done on this material with crewels of different colors. Thirdly, plain sewing was taught by working on linen aprons. Lastly, scrim or canvas was selected for aprons, and in addition to the cutting and making two strips of drawn work were made on the bottom of each apron, and in the space between that work an original design was outlined in silk. The design was first drawn on paper and then transferred to the scrim by the use of impression paper.

COURSE OF INSTRUCTION IN CARPENTRY.

Lesson 1.—Use of hammer, vise, the rule, try-square.
2.—Use of hammer in driving nails and spikes.
3., 4. } Use of plane.
5.—Use of jointer.
6.—Use of chalk line and rule.
7.—Use of smoothing plane.
8.—Use of saw.
9.—Use of rip saw.
10., 11. } Use of marking gauge.
12.—Use of bit and brace.
13.—Practice on lessons 9 and 12.
14.—Striking out and boring for mortise.
15.—Use of mallet and mortising chisel.
16.—Use of paring chisel.
17.—Planing to gauge.
18.—Making square frames from rough boards.
19.—Use of brad awl and screw-driver.
20.—Driving nails horizontally.
21.—Planing boards out of wind.
22.—Use of knife for accurate marking.
23.—Making dovetails.
24.—Sharpening tools.
25., 26. } Make square frame with locked joints.
27., 28. } Make square frame with mortised corners.
29., 30. } Make square frame with mitred corners.
31.—Preparing stock, sawing, planing, jointing.
32.—Striking out stock for different portions of a box.
33.—Halving sides and fitting ends.
34.—Putting parts together.
35.—Smoothing surfaces.
36.—Fitting lid to box.
37.—Fitting butts.
38.—Fitting lock.
39., 40. } Special instruction in sharpening tools.

The courses of instruction, and the methods and results of this experiment in adding industrial training to the ordinary work of the public schools, are succinctly stated by the Superintendent of the Montclair schools in a letter written January 12, 1887:

SUPERINTENDENT SPAULDING REPORTS THE SUCCESS OF THE EXPERIMENT.

This department has been in operation nearly five years, and with eminently satisfactory results. All pupils of both sexes in the second, third, and fourth grammar grades are engaged in industrial work.

During the first year each boy receives instruction one hour a week in the development of geometric forms with pasteboard cuttings, and also in clay modelling. At first the modelling is confined to geometric forms, while later, fruit and other equally difficult pieces are attempted.

During the second year the boys are systematically trained two hours per week in the use of carpenter tools.

During the third year the boys are employed in wood carving. In the majority of cases the boys originate their own designs for wood carving.

While the boys are in the workshop the girls are engaged in needlework, under the supervision of the regular class teachers. In the beginning the girls practice the various stitches used in plain sewing, following the course of lessons advised by the New York Industrial Association. After about a dozen different stitches have been mastered, work on garments, with simple cutting and fitting, is begun. Later in the course the girls embroider patterns upon linen, momie cloth, etc., using the various stitches of ornamental needlework and drawn work. The designs for this work are for the most part original.

A special instructor is provided in carpentry and wood carving.

The shop is a large and well-lighted attic of one of the school buildings, and is furnished with two dozen sets of carpenter tools and as many sets of wood-carving tools.

The chief aim in this industrial work is disciplinary. No effort is made to produce salable articles, but rather to provide such work as will best train the hand and eye.

Drawing is taught in all departments of the school, partly with a view to representation, but with special reference in the higher grades to decorative designs.

The results of industrial training in this school have been, so far as observed, altogether favorable.

Very respectfully,

RANDALL SPAULDING,
Superintendent of Schools.

HOBOKEN, NEW JERSEY.

The following extracts from the Annual Report of the Public School Department for 1885–'86* show the status of drawing and industrial education in the schools of the city:

DRAWING.

Whatever may have been the prejudice in the past in regard to this branch, it now seems to be generally admitted that drawing should be thoroughly and systematically taught in our schools. Being, as it is, the very foundation of most of the industrial pursuits, there are but few attending our schools to whom a knowledge of drawing will not be of practical utility in the business relations of their life-work. While the time for this subject is limited each week to one lesson of an hour's length, yet commendable progress was made during the year, with prospects of better results during the coming year. At the Industrial Exhibit, held in Stevens Institute this month, a general selection of work in this department was exhibited, and was considered by competent judges to compare favorably with that sent from other cities.

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* Annual Report of the Public School Department of the City of Hoboken for the year ending April 30, 1886, submitted to the Council May 1, 1886. Prepared by David E. Rice, Superintending Principal. Sudhaus & Erlenkotter, printers, 74 Fulton Street, New York. Pp. 24.

Drawing is in charge of a special teacher, whose salary is $1,000 a year.

INDUSTRIAL EDUCATION.

During the month of June last the late lamented General George B. McClellan inaugurated a movement in Hoboken to give a practical test to the use of industrial education in the public schools. The movement resulted in the organization of what is now known as the "Industrial Association of New Jersey." The Rev. George C. Houghton is its first president. It is fortunate in securing the advantage of his admittedly superior organizing powers. The other officers are residents of Hoboken, and carry into their work an intelligent enthusiasm, which augurs well for the success of the movement, Its name implies that its efforts are not to be confined to Hoboken alone, but to all New Jersey.

It should be a source of pride to the people of Hoboken that a movement in which so many hopes are centred should originate in our city.

The association asked for the co-operation of our school authorities to introduce the work into the schools in its simplest form, viz: modelling for the boys and plain sewing for the girls.

The boards of education readily acceded to the request, the understanding being that no additional expense was to be entailed upon the very limited resources of last year's appropriation. The experiment has had its trial and has been successful.

The association provided a teacher, and has conducted a class in modelling and a class in sewing in each school during two days of each week, two hours being taken up each day. The progress has been marvellous. The enthusiasm which the pupils carry into their work is something wonderful to behold, when we remember how adverse pupils generally are to give attention to their studies.

The point of most interest to practical educators appears to be satisfactorily solved by our experiment, viz: what effect it would have upon the teaching of the other and essential studies of our schools. There was some danger that it might distract the attention of the pupils and mar that progress which is absolutely indispensable in our schools. We are able to say, after close observation, that it is a help rather than a hindrance.

The short time employed in manual training is looked forward to as a recreation and a pleasure rather than as an additional burden put upon their minds; one and all appear to enjoy it, and seem to be proud of their work. There is a competition among them which calls out their best efforts. We are quite sure that the study of lines and the necessary calculations in their work develop aptitude for studies which are germane to these pursuits. Of course it can be readily seen that our experiment has been made under many disadvantages. Desks in a school room are not good places for modelling. The material used soils them and gives considerable trouble to the janitors. The sewing can be conducted with more success in the class room, the ordinary desk affording a very convenient table upon which to work.

NEED OF INCREASED FACILITIES.

When the experiment becomes more extended—as it must or be abandoned—shops properly fitted up should be furnished.

How this is to be done is a matter which will tax the public spirit and organizing resources of our best citizens. In the year 1881 an act was passed by the Legislature of New Jersey (approved March 24, 1881) which provides that in case $3,000 is raised in any city, town, or township for industrial educational purposes, a like sum shall be paid by the State. If some method were found to take advantage of this provision we might have the shop and shop equipments which are necessary to the success of the work.

Industrial education casts its shadow before it, and is one of our social problems which must be met and solved. Practical men see that the conditions underlying the labor and manufacturing problems of our country have changed during the last twenty years. We must adapt ourselves to the changed circumstances or get badly worsted in the battle of life. During the day and evening of the 15th, 16th, and 17th of April, of this year, through the energy and management of the officers and members of the Industrial Association of New Jersey, and by the favor of the trustees of the Stevens Institute of Technology, we have had an exhibition of the results of manual training in the public schools of the country in the Stevens Institute. The exhibition was opened by addresses by President George C. Houghton, Governor Leon Abbett, State Superintendent of Education E. O. Chapman, and School Trustee John Reid. It was visited by our best citizens and by distinguished professors and educators from all our neighboring cities. The work was critically and carefully examined by all, and was pronounced remarkable, being the work of children. Considering the limited time since we commenced it in Hoboken, our schools had a very fair exhibit, and did not suffer by comparison with others from abroad. It is understood that a general movement in the direction of introducing industrial education in the public schools is to be made throughout the coming year. Several of the important cities and towns are now making a similar experiment to ours.

The following is the report made by Miss N. N. Lowden, the teacher provided by the "Industrial Education Association," of the two years' work in the public schools.

The account of this State association will be found in connection with that of the New York Association.

MISS LOWDEN'S REPORT.

Industrial education was introduced into the Hoboken public schools in December, 1885. Classes were then formed in sewing and modelling. One class of girls, numbering forty, received two hours' instruction every week in a regular system of sewing prepared for use in public schools.

They commenced with the first principles, and were carefully and slowly led on, step by step. Not only were they taught to make small stitches and to be accurate, but they were required always to have clean hands and to be neat about their work.

The sewing was a favorite hour, the children striving earnestly to do well, and the parents also taking a deep interest.

The fourth class of boys was selected for the modelling, and this was also successful. The boys were trained first to measure, then to calculate distances. They were required to make square after square according to given measurements, until their eyes, as well as their hands, were trained to judge carefully and truly. Then they went on to work out models in clay.

When the classes closed in May the progress was highly satisfactory, and the work had afforded a change and a rest from the dull routine of school life, while the eye, the hand, and the brain had been developed.

In October, 1886, the sewing classes were recommenced, arrangements having been made to take in two classes in every school. In No. 1 school, however, three classes were formed, the teacher of the class who had heard the instruction the previous year volunteering to carry out the work in her room.

The class that commenced last year is now progressing wonderfully well, many of the children being very expert, and all continuing to be greatly interested.

In December, the pleasant room in No. 4 school having been completed, the modelling classes were reopened, and wood carving added to the instruction. One hour in every afternoon is devoted to the former and one to the latter.

The room has been conveniently fitted out, and two long pine tables are used by the modelling classes.

From 1 o'clock until 2 twelve boys assemble, the best four boys from three classes, as this class is intended as a reward. The only difficulty is to induce the boys to leave at 2, they so constantly beg for a few moments longer.

After drawing designs they carve on black walnut, ash, and oak; small boys of eleven proudly taking home a really well-executed piece of carving for the approval of their parents. Many letters have been received from fathers requesting that their boys might join this class.

PENNSYLVANIA, CITY OF PHILADELPHIA.

In Part I of this Report the history of the introduction of drawing in the schools of Philadelphia is recited, and extracts showing the interest taken by President Steel, of the Board of Public Education, in the subject of Industrial Education, are given. (See Part I, pages 13–30, and 377–383.)

The history of the progress of the movement during the succeeding years is similarly shown by the extracts from the annual reports, given in Appendix P to this volume.

Philadelphia long differed from many other cities in the organization of its public school system. Its schools were arranged in groups of school districts, each group having its own board of directors, elected by citizens of the ward, and practically managing its own affairs. There are some thirty-one such groups, or "sections," as they are called, all under the direction of the general city Board of Public Education, which board is composed of one member from each ward of the city, appointed by the judges of court of common pleas and the district court, and holding office for three years. The president and secretary of the board had nominal supervision and control of the schools, but they were engaged in private business, and had, besides, very limited authority in fact, so that the lack of some more direct authority and supervision over all the schools, by which they could be brought into a reasonable degree of uniformity, had long been felt; but it was not till after the matter had been agitated for some years that the change was effected, and it was decided in 1882 to confer ampler power upon some one executive officer, and to place the schools under the supervision and direction of a city superintendent, who should give his whole time to the duties of his office, aided by one assistant superintendent.

A NEW DEPARTURE.

In 1883 the experiment was begun. Mr. James MacAlister, the distinguished educator, who had been for some years superintendent of the city schools of Milwaukee, Wis., was called to the newly created office of Superintendent of City Schools of Philadelphia. He was given a force of four assistant superintendents, instead of the single assistant first proposed, to aid him in the great task of effecting a reorganization of the public schools of the second largest city of the Republic.

Mr. MacAlister, who had achieved an enviable reputation by his work in Milwaukee, was well known as one of the earliest and most zealous advocates and promoters of the introduction in all public schools of industrial art drawing, with a well-defined purpose of further developing a broad scheme for industrial training. These subjects had been much agitated in Philadelphia in connection with the Centennial, and subsequently a number of public-spirited citizens had made praiseworthy efforts to found a museum and art classes for the development of technical industrial art training.

Drawing already had some foothold in the public schools; sewing had been put into a number of the girls' schools. Mr. Leland's efforts in teaching "minor arts" to children had attracted the attention of the public and the school officials. President Steel, in the annual reports of the Board of Education, had shown a ready appreciation of the needs of some forms of industrial art training; while several independent schools, more or less artistic and industrial, were busy in the city. All these indications seemed to show that the times were most propitious for the coming of an educator so well furnished for inaugurating a new era in the public schools of the city.

FIRST REPORT BY THE NEW SUPERINTENDENT.

In the first official report made by Mr. MacAlister, as the Superintendent of City Schools of Philadelphia, issued in 1884, for the year ending December 31, 1883, after reciting his official action, with the reasons for the changes made, he deals with the whole subject of industrial education. Such extracts from this very instructive report as relate to the rearrangement of schedules and modification of methods of teaching the old studies, which were required to give opportunities for introducing the new studies, with his arguments in favor of "Industrial Art Drawing" and "Manual Training," are given in Appendix P.

The extracts from the two latest published official reports of the City Board of Education, which follow here, show the progress of the general movement towards introducing some forms of industrial training in the several grades of schools, as set forth in the reports of the president of the board, Mr. Steel, and as shown by the reports of principals, with courses of instruction, extracts from by-laws, etc.

The school year and the calendar year coincide; and, as the published report is not issued till nearly a year after the close of the school year, the latest report at hand is for the year ending December 31, 1885.

Since his exhaustive treatment of the subject in his first official report, referred to above, the Superintendent has made but brief reference in his two subsequent reports to these especial topics.

WHAT IS DONE IN INDUSTRIAL EDUCATION.

The "Industrial Art School" is the outcome of Mr. Leland's experiment, since adopted by the city and made a public school, Mr. Leland having returned to Europe some time since. A Manual Training School has also been established by the city, the account of which will be found with the schools of its class.

The city has long supported a number of night schools. The report for 1885 records 45 of them: 21 for men and boys, 12 for women and girls, 5 for both sexes, and 7 for colored men and women. More than 6,000 pupils attend these schools. One of these schools, the Artisans' Night School, already noticed in Part I, seeks to do for working artisans what the Franklin Institute and Cooper Union do for their pupils. In 1885 there were 315 pupils registered in this school, representing eighty different occupations. The pupils are arranged in classes, chiefly with reference to the special studies desired. All the work is done with reference to the practical everyday wants of the students; the problems in mathematics, for instance, are given to such calculations as their trades are most likely to require. The mechanical drawing is so planned that either a model should be made by the pupil from his drawing or a drawing from a model; free-hand sketches of solids are also required, and a few lessons in perspective given. This school has been in existence since 1868, and in 1885 had a record of a total attendance of 7,300 students. The councils appropriated a little over $35,000 for the support of these 45 night schools during the year.

In the following extracts from his annual report,* after the first year of Superintendent MacAlister's work, it will be seen that President Steel is, as was to be anticipated from his previous utterances, in hearty accord with the new educational movement:

PRESIDENT'S REPORT.

Gentlemen of the Board of Public Education:

In submitting my report for 1884, it gives me great pleasure to be able to congratulate the Board upon the progress which has been made in every department of the work. In no previous year have the members taken a deeper interest in the affairs of the schools, or devoted themselves with more energy to their improvement. Indeed, so much has been accomplished, that it will not be possible for me to compress within the limits of this report any just statement of the labor which has been performed or the results which have been obtained.

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*Sixty-sixth Annual Report of the Board of Public Education, First School District of Pennsylvania, comprising the City of Philadelphia, for the year ending December 31, 1884, with their Accounts. Philadelphia: Burke & McFetridge, printers, 306–308 Chestnut street. 1885. Pp. 370.

DEPARTMENT OF SUPERINTENDENCE.

The First Annual Report of the Superintendent of Public Schools, which was laid before you some months ago, so fully set forth the work which has been done in his department, that it will not be necessary for me to make any extended reference to it in this place. There are two or three matters, however, to which it seems proper to call the attention of the Board.

The most important task undertaken by the Superintendent during the year was the revision of the courses of study in the primary and secondary schools. He has very clearly and satisfactorily stated in his report the character and object of the changes made. The chief purposes of the revision were to break up the mechanical routine into which the teachers had fallen, and to substitute rational methods, which should lead to the natural development of the child's power. Heretofore the larger part of the teacher's work has consisted in training the memory of her pupils. The *learning of words* has been the chief business of the child.

THE NEW METHODS.

The aim of the new course, as I understand it, is to develop ideas in the minds of the children by means of contact with things. The fundamental principle underlying all the instruction is that "the teacher should proceed from the near, the practical, the real, to the remote, the abstract, the ideal." This is the method indicated by nature and insisted upon by every recognized authority in the science and art of education. It makes education grow out of the mental constitution of the child, and aims to develop its faculties in such a way that additional power is gained at each successful step, and every new growth confers the power to do as well as to think. This principle puts the child in entirely new relations to the school. He is required to get his knowledge of number from objects, and not from the abstract symbols which represent numbers. In spelling, he does not learn long columns of disconnected words which, represent nothing to his intelligence, but acquires the ability to make the form of words with the use of which he is familiar. His reading does not consist in simply repeating words and sentences, but implies the understanding of the thought and the realization of the sentiment which lie behind them. His drawing is the representation by lines of things which he sees and handles. The object lesson is a means for unfolding his perceptive powers, and the language training aims to cultivate the power of expressing by means of words, first orally and then in writing, the ideas which are derived from the entire range of his school work and the actual experience of his child-life.

NEW METHODS APPROVED.

Such a method of intellectual training commends itself to the common sense of every person, no matter how limited may be his knowledge of the teacher's methods; and if faithfully carried out, cannot fail, it seems to me, to produce better results in our schools than those heretofore obtained. It is a grave mistake to suppose that the undeveloped mind of a young child can be taught a knowledge of any subject by making him repeat the words in which this knowledge is embodied. The chief function of the educator in the elementary school is to generate mental power, to strengthen the faculties by exercise, to render the mind receptive of knowledge by its self-activity. These are the ends which the new course of instruction undertakes to accomplish, and its establishment in the Philadelphia Public Schools places them in line with the most advanced centres of educational work in this country.

RESULTS.

The real test of any course of instruction, however, must be sought for in the results which it can be made to yield. The few months during which the new methods have been in operation have not afforded sufficient time to show the general outcome we have a right to expect; but in some branches a marked improvement is already visible. The progress made in reading, writing, language, and drawing has been gratifying in the extreme. In most of the primary schools the little children write well with pen and ink, whereas a year ago many schools never got beyond the use of the lead pencil, and in some cases the slate work was the limit reached. The reading is made to quicken the intelligence and cultivate the hearts of the pupils. In language, the teachers themselves have been surprised at the ease with which the little ones express themselves; and the drawing is beginning to exhibit that training of the hand and eye which is its chief function as a branch of study in the elementary school. In arithmetic, the teachers have been slower in getting hold of the objective system of instruction; but wherever the methods have been properly applied, their superiority in developing correct ideas of number and the ability to deal with figures have been fully demonstrated. From all that I have been able to learn of the operation and results of the revision thus far made, the conviction is borne in upon my mind that a great work has already been accomplished, and that we may safely look for the establishment, in due time, of a sounder and more practical education for the children entrusted to our care.

It is needless that I should allude to the difficulties the Superintendent has had to overcome in effecting these changes and the labor yet needed on his part to work them thoroughly into the schools. The teachers must be indoctrinated with the spirit of the new methods, as well as trained to use them in the school room; but I believe that the same patient and earnest endeavor which has carried the work thus far will bring it eventually to a successful issue.

INDUSTRIAL EDUCATION.

I congratulate the Board upon the success which has crowned its efforts during the past year to bring the public school education more into harmony with the social demands of the time. I have in previous reports urged the importance of industrial training as a part of general education, and it affords me heartfelt satisfaction to record the action recently taken by you in this connection. The appropriations so liberally made by Councils will enable the Board to make a beginning with manual training in the regular school curriculum. I am not prepared, nor is this the place, to point out just how the start should be made, but I am confident that the Board will be able to devise some plan which will demonstrate the advantages of hand-training in connection with head-training. The main object should be to give the boys of this city such an education as shall enlarge their capacity for usefulness as members of society, while broadening their culture as human beings. There need be no fear as to the outcome of this movement.

NO LONGER AN EXPERIMENT.

Industrial training can no longer be regarded as a mere experiment. In our own country, as well as in Europe, schools have been in existence for some time in which manual training is recognized as a necessary adjunct of mental training. We shall have the benefit of their experience in commencing the work in Philadelphia. All we have to do is to guard against making a false step at the outset. A wise beginning will secure the approval of the public and the co-operation of Councils; and I have no doubt that before many years Philadelphia will be able to perfect such a systematic course of industrial training for her children as shall enhance her advantages and opportunities as a manufacturing centre, while elevating the intellectual and moral tone of the community. In my judgment, no step taken in connection with the public education of this city so fully indicates the literal and progressive spirit which is taking possession of all who are interested in the improvement of our schools as that of which I am now speaking.

ADVENT OF A NEW ERA IN EDUCATION.

Of one thing we may rest assured, that the education of every civilized country is about to undergo important modifications in the direction of industrial training. The age of industrialism has come. Our intellectual and moral ideas, our social and political life, are rapidly changing under the influence of this new power which dominates the world. The schools in which the people are educated must be made to conform to these conditions. The education which was moulded by the influences of civilization two or three hundred years ago will not do for the living present. The wealth, the power, the greatness of a nation, depend in our time upon its productiveness — that is to say, upon the use it is capable of making of science, of art, of machinery, of raw material. Nothing but education can give it this power. That country whose schools are organized in accordance with the forces which control society must inevitably take the lead. Hence it is that the leading nations of Europe are adding technical schools to their educational systems as eagerly as they are increasing their warlike resources. If the United States, which, above all other nations, is devoted to the triumph of the peaceful arts, is not to lag behind, the industrial element must be made universal in the education which, with so liberal a hand, she provides for all the people. * * *

SEWING.

It is gratifying to be able to state that the girls have not been neglected in the desire of the Board to provide a more comprehensive and practical education for the children of the city. Availing itself of a small surplus in the item of teachers' salaries, an experiment with sewing as a branch of instruction in the girls' schools was begun last December. Eleven special teachers were temporarily engaged and detailed to the secondary and grammar schools of nine sections. So far as I can learn, the trial has been satisfactory in every respect. The principals of the schools in which the instruction has been given express themselves as highly pleased with the results so far obtained. The girls have enjoyed the work and have made steady progress in the use of the needle. Their parents have become interested, and have expressed a willingness to co-operate in the movement. No interference with the other studies has been reported, and the effect of the sewing lessons in retaining the girls in school has already been felt. Encouraged by these facts, the Board has recently taken steps to extend the instruction into all the girls' secondary and grammar schools of the city. This will require a large increase in the number of sewing teachers, and it is to be hoped that the funds at command will be adequate to the additional expenditure that will be needed. I must refer to the excellent work the Normal School is doing in this branch. The fact that sewing has been so successfully taught in this school has doubtless been of great service in connection with the larger field into which it has now been extended. I regard the action of the Board in this whole matter as deserving the warmest approval, and it will certainly receive the most cordial support from the public.

The following extract is from the report of Mr. George W. Fetter, principal of the Girls' Normal School:

INDUSTRIAL WORK IN THE NORMAL SCHOOL.

The Departments of Sewing and Drawing deserve special mention. Some very excellent work has been done in these departments. An exhibit sent to the "World's Exhibition" at New Orleans has been pronounced by good judges to be worthy of much praise. The average time given to sewing is one hour per week during the first three years.

The first year the material is furnished the pupils, and they are instructed in the simplest kind of work, preparatory to cutting, fitting, and making garments and other useful articles.

The second year the material is brought from the homes, and kept in the school in a large closet prepared for the purpose. When completed, it is examined by the teacher, and if satisfactory, is given to the pupil to take home.

A list of articles made by Classes B and C during the year is appended:

Aprons	148
White undergarments	106
Underwaists	57
Ladies' white skirts	26
Ladies' flannel skirts	23
Ladies' cashmere sacques	4
Ladies' chintz wrappers	2
Lady's gingham dress	1
Ladies' night dresses	9
Ladies' dress waists	4
Children's garments	32
Boys' shirt waists	7
Men's shirts	5
Shoe-bags	4
Hemstitched pocket-handkerchiefs	7
Pillow-cases	59
Pillow-shams	5
White table-cloths, hemmed	6
Table-napkins, hemmed	48
Ladies' flannel sacques	6
Total	559

One hundred and sixty young ladies draughted to their proper measurements paper patterns for dresses, by which they can make their garments with due regard to fitting and style.

COOKING.

It is deemed a proper time to suggest that a Department of Cooking be added to the school. There are many reasons which may be urged in favor of such a step. Few women go through life without finding, at some period, a knowledge of cooking not simply useful, but absolutely essential. Nothing tends more to make a home happy than the proper supervision and preparation of well-cooked and palatable food. Most of the pupils of the school will become heads of families, and be compelled to superintend and perhaps perform many of the operations of cooking in the household. In their vocation as teachers they have little time or opportunity to gain that knowledge requisite to the performance of this work; and many mothers finding in cooking, as in sewing, no opportunity of instructing their daughters in this most useful of the domestic arts.

The following extracts from the latest published annual report of the Philadelphia Board of Public Education* give President Steel's report upon the state and progress of the industrial movement in the city schools. The special reports of the Industrial Art School Committee and of the Director of the school follow. Extracts from the "by-laws and rules" of the Board, so far as they relate to the Industrial Art School, are given; also the "rules" relating to other forms of industrial education. The account of the Manual Training School is given elsewhere.

INDUSTRIAL TRAINING

The advancement made by the Board in carrying forward the work commenced in industrial training a year ago has been so rapid and extended, that it is difficult for me to speak of it with the detail that I would like. The most important step has been the establishment of a manual training school as a part of the public school system. This action of the Board has attracted wide attention throughout the country, and has been the means of creating a larger degree of interest in the school system of Philadelphia than anything heretofore attempted by the Board. To our sister city—Baltimore—belongs the honor of having first organized a public school of this kind, but Philadelphia comes next in order, and our enterprise is on so much larger a scale, and is founded on so much broader a basis, that we might well claim the merit of originality in a movement which seems to me so momentous to the public school system of the entire nation. The character and objects of the school have been so fully set before the public, that it is not worth while for me to dwell upon them in this place. The plan was carefully considered, and the most approved features of the schools of this kind in other cities—but under private management—were incorporated therein. In several respects, however, our scheme of training and instruction varies from that pursued in these schools, and it is believed that improvements have been made which tend to render it better adapted to the ends for which it has been instituted.

THE MANUAL TRAINING SCHOOL.

The name—Manual Training School—only partially indicates the scope and purpose of the education it seeks to bestow. It is not simply a school for hand-training; it includes this element, which we are now beginning to realize has been too long neglected, but includes it simply as a part of the symmetrical development of the whole being. It proposes to train mind and body, and thus affords an education which is at the same time more complete and more practically useful in the business of life.

The school as organized succeeds the grammar school. Pupils who have finished the grammar school studies are admitted by examination. The full course covers three years, and includes thorough training in the structure and application of the fundamental tools, free-hand and mechanical drawing, and instruction in the English language, mathematics, elementary science, general history, and civil government. Each day is divided into six periods, three of which are given to the literary branches, one period to drawing, and two periods to shop work. This is a fair distribution of time, and ought to produce that balance of mind and body which educational reformers have been seeking from the first. As to the advantages of such a course of training, theoretically as well as practically, it seems to me there can be no question. The boy who goes through this school must enter upon life and its duties with many chances in his favor, and ought to prove a more useful as well as successful citizen. I congratulate the Board most heartily upon the promising beginning which this school has made, and predict for it a future filled with good not only to our own community, but to other cities which may be led to follow in our footsteps.

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* Sixty-seventh Annual Report of the Board of Public Education, First School District of Pennsylvania, comprising the city of Philadelphia, for the year ending December 31, 1885, with their Accounts. Philadelphia: Burk & McFetridge, printers, 306-308 Chestnut street. 1886. Pp. 416.

SEWING.

The instruction in sewing has been carried forward with great success during the past year, and may now be regarded as having passed the experimental stage. The results already obtained fully justify all that was claimed for this branch of training when it was introduced fifteen months ago. So well has the system of instruction been organized, and so satisfactorily has the teaching been conducted, that the approval of the public has already been won.

Instruction is given to all the girls in the secondary and grammar schools—about 25,000 in round numbers. The work is done by special teachers, who are distributed throughout the schools, in accordance with programmes made in the Superintendent's office. Two of the assistant superintendents — Misses Kirby and Haggenbotham—exercise a general direction over the instruction, and have done much towards establishing it upon a satisfactory basis.

I congratulate you upon all that has been done in carrying the schools along these lines of improvement. All these changes have been introduced with care, the Board recognizing the wisdom of gradual progress, rather than the hasty adoption of all that is needed to make our schools conform to the highest ideal of public education.

Several years have been required to engraft into our system measures that were clearly demanded at the outset, but this gradual advancement has placed these features upon a firm and enduring footing. In my judgment, however, we must not pause here; we have made a good beginning, and laid the basis of more complete and thorough improvement. I believe it is now time for the Board to turn its attention to the first stages, and to commence the reorganization of the primary department, taking up the whole subject of the earliest instruction of children in the school room, and presenting to Councils and the public a complete system of primary training. This subject embraces so much, that all I can say in regard to it must appear superficial, and the mention in this report of some of the features that should enter into such a course of instruction must be considered the merest outline.

KINDERGARTENS.

First to be urged is provision for training children of less than the present school age—six years. That the average child now wastes or mis-spends the years from three to six will be admitted by all who have observed the influence of the kindergarten upon the development of the few who have been privileged to receive its training. There is no period in childhood in which the mind is more active and inquiring, and none in which it is more ready to receive lasting impressions of duty and its relations to its fellows. This instruction should be in skilled hands, and must be confined to the scope and methods of the kindergarten. The statistics of the schools show that a large number of children from necessity leave school to earn a living at an early age, and to these the sub-primary or kindergarten schools would be of the greatest benefit.

Such schools cannot be established by private enterprise; the extent to which they would be patronized, and the necessity for trained teachers, etc., make them only possible as part of a great public school system. I earnestly urge the establishment of this class of schools as part of our system, and believe the money expended would be a most profitable outlay.

IMPROVEMENT OF THE PRIMARY SCHOOLS.

Apart from the enlargement of the primary department, by extending it to younger children by means of the kindergarten, is the duty of improving our primary schools. The low salaries which for years were paid to the teachers in these schools placed a ban upon them, and put them outside the ambition of the ablest teachers, and, as schools are largely a question of teachers, this important department of work has greatly suffered. The changes made in salaries some years ago, which still left a discrimination in favor of the grammar schools, did not go far enough, and should be further amended by equalizing the pay in all the departments. I can see no reason for the inequality of the salaries in the different departments of instruction. The serious objection to making the compensation to primary and secondary teachers less than that paid in the grammar grades is, that it reduces the quality of the work done in the former. We are all aware that there are able and faithful teachers engaged in primary and secondary work, but the effect of the lower salary allowed for these departments of service is to drive the more desirable instructors into the grammar grades.

No teacher can be blamed for seeking an appointment where a higher reward is to be had. The results of this discrimination against the primary teachers are so patent, that it is needless I should repeat the catalogue. But the most serious aspect of this question is the embargo it places upon every effort to raise the quality of the instruction and training of the young children, whose education is certainly not the least important of our responsibilities.

IMPORTANCE OF THE PRIMARY SCHOOLS.

The importance of laying a right foundation for the education of every human being, and the fact that out of the tens of thousands who attend the lower schools many never go beyond their limits, are statements so hackneyed, that they are apt to be disregarded. But this does not diminish their impressiveness as reasons for making the schools where these multitudes of little ones are found certainly as good as those where the few and the more favored portion of the community are privileged to attend. I feel free to say, also, that the duties of the primary and secondary teachers are quite as weighty as those of the teachers in what are technically called higher grades of work.

The woman who is entrusted with the delicate task of planting the seeds of knowledge in the tender minds of the young needs as many of the characteristics of the good teacher as she who is to cultivate the flowers which good nurture will afterward produce. But you have no right to expect this if you offer lower inducements. * * * Taking into consideration the special efforts which have been made to improve the character and usefulness of the primary and secondary schools during the past two years, I desire to urge upon you the propriety of making the compensation of all assistant teachers the same, no matter in what grade of work they may be employed. This means, of course, an increase in the salaries of assistants in the primary and secondary schools. * * * If an equality of salary were established, we would secure a more equable distribution of the best talent and most approved experience throughout the school system. Teachers would seek positions from other considerations than that of salary. They would gravitate to the places where their tastes and aptitudes would find the freest play and the highest satisfaction; and the tone and quality of the primary instruction would thus be strengthened to an extent which nothing else can permanently secure. The marked differences between the primary and grammar school instruction would disappear, and a fuller measure of justice would be meted out to a larger number of children who are seeking the advantages of the public schools.

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MANUAL TRAINING IN PRIMARY SCHOOLS.

Lastly, manual training should be made part of the primary course. Simple justice to children demands that they should have the benefit of this truly higher education. Public education will never return even a moiety of what is expected from it until it recognizes the cardinal fact, that the hand was created to be the dexterous servant of the mind, and that upon its skill rests much that concerns human happiness. That education has been conducted for so many years without this kind of training is no reason for its continued neglect; the world was for centuries without any attempt at public instruction of any kind, and the necessity for this form of education comes to us in these later years with all the force that the subject of public education presented itself two centuries ago. Training that omits preparation for the practical duties of life is worse than defective; it is false and misleading, and if erroneous views of labor exist in the minds of young people, the system of education which their elders have devised is greatly responsible for it.

If the institution of public education insists that the intellectual faculties alone shall be cultivated and developed, the responsibility lies with it for idle and unskilled hands, and for the tendency to "live by our wits," which it has alone cultivated. If our boys grow up without any knowledge of the pleasure that comes of work, the delight of fashioning and producing some useful thing by the skill of the hand, without an opportunity of learning its aptitude for the great industries of the world, it is due to years of exclusive mental instruction and manual neglect. How can the choice of an occupation be wise and manly with such a one-sided education? Man's growth and ultimate excellence were insured by surrounding him with the necessity to labor, thus making it a means of development. Our system of education ignores this great law, and attempts to prepare youth for the duties of life by cultivating but one part of their nature.

MUST BE TAUGHT IN ALL THE GRADES.

Manual training must be made universal, so that every hand may have its care, and derive from it whatever its faculty of appropriation may be. Its introduction into higher schools is of great advantage to the pupils of those institutions, but it must be carried into the lower grades if we are to reap the moral and material benefits it is capable of yielding. Well-devised systems of manual instruction for young children, in connection with other studies, are now in use in other cities, and they are not only practical in connection with our present course of study, but combined with it are calculated to give an interest and vigor to school life which is not possible under the present exclusive attention to mental work.

I am convinced that with the kindergarten established as part of our system, and manual training carried through our first eight grades of study, the average scholar would be better prepared and developed for the duties of life than is now accomplished by the entire course. The Board should take measures to make a beginning with this kind of instruction, so that it may be tested as a part of primary school work and its general introduction fairly considered. * * *

THE INDUSTRIAL ART SCHOOL.

The adoption as one of the public schools, of the school first started by Mr. Leland has already been noted. This school is now known as the "Industrial Art School." The following extracts from the annual report of the committee in charge of the the school show its development:

REPORT OF THE COMMITTEE ON INDUSTRIAL ART EDUCATION.

To the Board of Public Education of the First School District of Pennsylvania:

GENTLEMEN: The Committee on Industrial Art Education respectfully submit the annual report of the Director of the Industrial Art School, from which it will be seen that that institution is in a highly flourishing condition, the attendance being much larger than ever before, and the interest displayed by the pupils in the several departments so marked as to be almost extraordinary. The discipline of the school is admirable, the instruction practical and thorough, and the progress of the pupils satisfactory in the highest degree. The committee note with great pleasure and special commendation the regularity of attendance. Almost without exception the withdrawals have been the result either of sickness, removal, or other unavoidable causes, and not from any lack of desire on the part of the scholars to continue their studies.

The Committee also direct the attention of the Board, and of the friends of progressive education generally, to the teachers' class just organized, and which gives such unmistakable evidence of ultimate advantage to the public schools generally. Were it possible to offer facilities for such instruction to all the teachers who need and desire it, the benefits would be very great, while the cost would be comparatively small.

Anticipating increased appropriations as the qualities and advantages of the school become more generally understood, your Committee congratulate the friends of education upon what has already been accomplished.

A. M. SPANGLER.
SAML. T. CHILD.
SAML. W. PENNYPACKER.
WM. M. SMITH.
ISAAC A. SHEPPARD.

ANNUAL REPORT OF THE DIRECTOR OF THE INDUSTRIAL ART SCHOOL (FOR 1885).

[Industrial Art School, Fifteenth and Locust Streets.]

To A. M. SPANGLER,
Chairman of Committee:

I beg to report that since the opening of the new term, in September last, there has been very marked improvement, not only in regularity of attendance, but in the notable interest displayed by the pupils in the several departments of the school. As a result, there has been gratifying progress, and the positive assurance given that the usefulness of the school has been largely promoted by the adoption of the regular course of study, the employment of a full corps of competent teachers, a well-devised and thoroughly enforced system of discipline, and a superintendency praiseworthy and efficient.

The only falling off in the attendance of the session thus far was during the public school examinations, when a number of the pupils were necessarily absent, though the list of absentees, circumstances considered, was not large.

Every department of the school has been filled to its fullest capacity for effective teaching. This has been especially the case with the Saturday morning classes, a fact which becomes the more significant, and displays in a still larger degree the interest of the pupils in their studies, when it is remembered that they give up a very material portion of their regular weekly holiday in order to secure the benefits of the school.

Since the opening of the term, purchases of materials, tools, etc., have been made to an extent that has permitted an enlargement of the modelling and woodworking departments, though there is room for a moderate additional outlay, in order that the wants of the departments named may be adequately met. Accommodations have thus been provided for twenty-five more pupils, without any extra expense, save for materials, which will be very light.

Those improvements having equalized the three divisions, we are now enabled to rotate the classes each month, beginning with March; thus enabling every pupil in the school to receive instruction during the year in each branch, namely: three months in designing, three months in modelling, and three months in wood carving and general wood working. The changes are made monthly.

The metal-working class meets on Saturday, but the facilities for imparting instruction in that department are so limited—the plant being wholly inefficient—that it has not been possible to make it part of the general course of instruction for all pupils. If Councils can be prevailed upon to enlarge the appropriation for the school next year, I would recommend an increase of the plant, not in brass working only, but also for the providing of the needful tools and machinery for a wrought-iron and forging department. This last-named branch will, I feel very confident, eventually be given the preference over almost any other (in metal) for the advancement of hand-culture.

I need not say that the operations in forging and shaping light wrought iron are of special value in industrial training, as well as in the education of the eye, they bringing the eye and the judgment constantly into active exercise.

THE TEACHERS' CLASS.

One of the most recent, as it is one of the most important and interesting, features of the Industrial Art School is the teachers' class, organized on the 13th of February of the present year. An appropriation of $1,000 by Councils enabled the Committee to establish a class of one hundred scholars, composed entirely of teachers in the public schools who desired to become familiar with the principles and practice of free-hand drawing and modelling in clay as taught in the school, in order to better qualify themselves for the discharge of their duties as instructors. There were two hundred and thirty applicants for admission. It is very much to be regretted that the appropriation was not sufficiently large to enable the committee to provide instruction for all the teachers who applied. It is hoped that as the many advantages the public schools will derive from this novel course of instruction are understood and appreciated Councils will be induced to provide the means for the needed increase of facilities.

The teachers' class is divided into two sections. The entire class of one hundred first receives a lesson on design with blackboard illustrations, which occupies some twenty minutes, the remainder of the session being then devoted to practice. Sixty of the teachers remain in the drawing-room under the instruction of competent teachers, while forty, under an equally efficient corps of teachers, engage in clay modelling. The pupils of that class will be rotated from room to room once in each month.

It is impossible to describe the marked interest of the adult pupils who compose this class in the work assigned them, though the same spirit appears to animate all of the classes. Already many of the teachers have admitted that they not only greatly enjoy their studies, but find in the newer and more advanced method of instruction in vogue in the school great improvement upon the old methods.

ATTENDANCE.

The following statistics, furnished by Mrs. M. C. Robins, superintendent of the school, show the attendance during the term commencing September 22, 1885, to February 11, 1886, inclusive:

	Tuesday.	Thursday.	Saturday.
Boys	71	93	70
Girls	79	68	55
	150	161	125

Total, 436 scholars.

February 13, 1886.

Total attendance, Tuesday	162
Total attendance, Thursday	164
Total attendance, Friday	156
Total teachers, Saturday	100
Total	582

On the 13th of February, the teachers' class having been organized, it became necessary to transfer the sessions of the Saturday morning class of boys and girls to Friday afternoon. The present sessions of the school are therefore as follows: Tuesday, Thursday, and Friday afternoons, from half-past 2 to half-past 4 o'clock, for school children; Saturday morning, from 10 to 12 o'clock, for public school teachers.

The children's classes, respectively, are divided as follows:

Designers	80
Modellers	40
Wood working	40
Metal working	15

Teachers' class.

Designers	60
Modellers	40

J. LIBERTY TADD,
Director.

Course of Instruction in the School of Industrial Art (open to Grammar School Pupils).

DRAWING AND DESIGN.

1. Free-hand drawing and the making of designs for the attainment of proficiency in linear drawing and simple washes.
2. Designs, in every case to be original, and for the purpose of being used in wood, metal, clay, wall-paper, fabrics, etc.
3. Drawing of meanders and intervolutions, in combination with set figures.
4. Working designs in monochrome, for training the pupils in handling the brush.
5. Lectures and blackboard demonstrations on the structure and meaning of ornament and design.
6. The importance of designing for some purpose to be kept constantly in view, and the pupil to be required to produce work to be applied to material.

MODELLING.

1. How to temper the clay, keeping moist, wedging, etc.
2. Training in the use of tools.
3. Modelling in low and high relief from casts.
4. Modelling in low and high relief from original designs.
5. Modelling on the round surface, incised work, shaping vessels, etc.
6. Modelling from casts of portions of the human figure.

WOOD CARVING.

1. Instruction in the use and care of tools.
2. The transferring of designs.
3. Low and high relief, carving in soft and hard woods, bosses, scrolls, mould-sinking.
4. Carving enrichments for cabinet work, panels, etc.

CARPENTER AND JOINERY WORK.

1. Use and care of tools.
2. Fundamental processes:
   Sawing—rip and cross-cut saw.
   Planing surfaces, chamfering, nailing, boring with brace and bits, planing and squaring, making of glue joints, making of tenons and mortises, sand papering.
   All work to be done from working drawings on scale, made by the pupils.
3. Construction:
   Typical articles to be constructed by the pupils from working drawings on scale.

METAL WORK.

1. Use and care of tools.
2. Use of blast, forge, anvil, snarling tools.
3. Making and caring for cement.
4. Annealing and tempering.
5. The shaping of vessels, placques, etc., from sheets of metal by hammering.
6. Drawing and graving the design on flat and curved surfaces.
7. Embossing and chasing on the flat and curved surfaces.
8. Working on cement.

DUTIES OF THE COMMITTEE ON INDUSTRIAL ART EDUCATION.

I. They shall have the general direction of the Industrial Art School, shall visit the school as often as necessary, keep regular minutes of their proceedings, and report annually the state of the school. They shall nominate to the Board teachers who shall be needed in the school, and in case of a vacancy shall recommend to the Board a suitable person to fill the same.

II. It shall also be the duty of the Committee to provide such a course of instruction and training in the Industrial Art School as shall practically realize the special objects of the school, which course of instruction shall first be reported to and approved by the Board, and to make all necessary rules and regulations for the proper management of the school. * * *

CONDITIONS OF ADMISSION TO INDUSTRIAL ART SCHOOL.

I. Admission to the Industrial Art School shall be limited to the pupils of the grammar grades. No pupils shall be received except upon the understanding that they are to attend for at least a full term.

II. Applications for admission may be registered with the Committee on Industrial Art Education, and admissions shall be madé as vacancies occur. The names of pupils desirous of continuing in the Industrial Art School must be renewed each term, and must be sent, together with the names of new applicants, to the Committee, by the principals of the several schools, on or before the second Monday of the term.

III. No pupils shall be admitted except upon the written applications of their parents or guardians, and certificates from the principal of the school to which the pupils belong, testifying to their good conduct and regular attendance.

IV. In admitting pupils to the Industrial Art School, the quota of each school shall be one pupil for each grammar division, including the senior classes, and applicants shall be admitted from each school in the order of their standing in drawing. Vacancies caused by schools not sending their full quotas shall be distributed among the other schools according to the average standing in drawing of all the applicants.

V. It shall be the duty of the director of the Industrial Art School to keep the principals of the schools to which the pupils respectively belong regularly informed of their presence at the Industrial Art School.

VI. Pupils shall not receive demerits of any kind in the schools to which they respectively belong on account of their attendance at the Industrial Art School; but absence from the latter shall be charged against them in accordance with the rules of the school to which they belong.

VII. Pupils who shall be absent two consecutive sessions, or three sessions in any one month, unless their absence is satisfactorily accounted for by their parents or guardians, shall forfeit their seats in the school. It shall be the duty of the director of the Industrial Art School to notify the principal of the school to which the pupils respectively belong, that their names have been stricken from the roll.

VIII. Certificates shall be granted to pupils who finish the whole course of study and execute original designs in clay, wood, or metal to the satisfaction of the Committee.

DUTIES OF THE COMMITTEE ON GRAMMAR, SECONDARY, AND PRIMARY SCHOOLS.

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STUDY OF SEWING.

III. The Committee shall have general charge of the study of sewing in the schools; shall define the hours to be devoted to it; and shall furnish, through the Committee on supplies, all material and articles needed for it.

QUALIFICATIONS FOR THE POSITIONS OF TEACHERS OF SEWING.

It shall be the duty of the Committee to examine into and determine the qualifications of candidates for the positions of teachers of sewing. After such examination, the Committee shall transmit to the Committee on Qualification of Teachers the names of the persons who may be considered competent, and the latter committee shall thereupon issue certificates of qualification to such persons.

ALL TEACHERS OF SEWING MUST HAVE CERTIFICATES.

No person shall be appointed as teacher of sewing in the public schools who does not hold the proper certificate of qualification.

MARYLAND, CITY OF BALTIMORE.

An account of the Manual Training School of this city, to which frequent reference has been made, will be found in connection with those of the similar schools in other cities. A recent preliminary meeting, held in Baltimore, June 23, 1887 (reported in Baltimore Sun, June 24, 1887), with a view to the establishing of an "Industrial Education Association," on the plan of the vigorous association in New York, brought together the leading citizens and educational officials and heads of various public and private institutions in which either artistic or industrial training was given. Addresses were made and concise reports of the work of the several institutions were presented.

The occasion affords an unusual opportunity of getting in one view a glimpse of the various educational instrumentalities set on foot by the benevolent inhabitants of a large city.

Professor Remsen, of Johns Hopkins University, presided, and gave a most interesting summary of the laboratory work and of the work in drawing undertaken in the University. Hon. John T. Morris, President of the Board of Commissioners of Public Schools of Baltimore, gave a succinct history of the founding and success of the Manual Training School, and spoke in detail of the present industrial work given in the other public schools, and of the plans of the Board. Extracts from this part of his address will be given later.

Joseph M. Cushing, Esq., President of the Maryland Institute, gave a clear statement of the scope of the varied artistic and technical instruction afforded in the several schools and classes of the Institute. A paper by Professor M. A. Newell, State Superintendent of Education and Principal of the State Normal School, was read by Dr. Richard O. Grady, formerly director of the Manual Training School. This paper, as it relates to the public school training in the State schools, is given later.

Mr. Joshua Levering, President of the House of Refuge, an institution for youth akin in its purpose and the training given to the McDonogh School, made a statement of the educational work and plans of the managers. The studies are similar to those of the primary and grammar grade schools of the city; while five hours each day are given by each boy to industrial training. Eventually it is hoped to erect a thoroughly equipped Manual Training School. In this institution, however, unlike the training proposed in public schools, the aim is to teach practically some definite trade or occupation, by which the boy can earn his living. This has been done with great success.

Mr, Joseph Merrifield, secretary of the Board of Managers of that institution, represented the Manual Labor School, where the boys are given elementary instruction in farming and mechanics. An interesting statement, prepared by Mrs. Henry Stockbridge, President of the Decorative Art Society, was read by Professor Fuchs, principal of the Art Schools of the Maryland Institute. This paper will appear elsewhere in the subsequent account of this society.

Dr. R. H. Goldsmith in charge of the St. Mary's Industrial School for Boys, a Catholic reformatory institution, incorporated in 1866, "to give boys moral training, a good English education, and to teach them trades," gave an account, with statistics, of the success attending their efforts in transforming idle boys into industrious, intelligent producers.

Mr. William A. Wisong spoke for the Henry Watson Children's Aid Society, chartered February 14, 1862, to gather up homeless children and provide for them homes in the country; given Mr. Watson's name in 1872, because of an endowment, by that gentleman, of $100,000. Instruction in the use of the sewing machine and in cutting and making of garments is given. Thousands of children and women have been taught here.

Dr. J. Carey Thomas represented the Friends' Gospel Mission, which, begun more than twenty years ago as a boys' meeting, on Sunday afternoon, was soon supplemented by a girls' sewing school on Saturdays, and finally a cooking school was added. Many hundreds have been taught in these classes.

This brief summary of the meeting is here given as an illustration of the co-operation that may, and often in this country does, exist between public officials and private benevolent citizens in their struggle against a common evil.

In the continual contest against ignorance and idleness which must be successfully waged if our forms of civilization are to continue to exist in a free Republic, no aid is to be rejected. Still this very meeting, in which the representatives of these admirable private institutions took part, furnishes a striking proof that the united force of the community is needed to successfully combat public evils or to meet public needs. If industrial training is of the specific virtue claimed for it by its friends, it will sooner or later inevitably become a part of public systems of education, very possibly in forms and to an extent for which even its advocates are not yet prepared.

Such parts of the address by President Morris are given as show the present situation of Baltimore schools in all that relates to industrial training, together with the brief paper by Professor Newell, showing what has long been and is now being done in the State Normal School. As educators are generally aware, the new departure in education has no more zealous or able advocate than the distinguished State Superintendent of Maryland.

THE PUBLIC SCHOOLS.

Mr. John T. Morris, President of the Board of Commissioners of Public Schools of Baltimore City, said: "During the past fifty years the public schools have furnished the principal part of the education of our citizens. In their early history they were weak and unpopular, because they were regarded as a public charity, and free education was deemed a doubtful experiment. But these early prejudices have long since passed away, and now free instruction is recognized as an obligation due by the Government to the public. * * * Whilst some effort has been made by a few persons to limit the instruction to elementary education, it is gratifying to know that these efforts have failed, and public sentiment has demanded that every grade of instruction should be embraced in the curriculum of the public schools. The true policy of the State is to establish and support by public taxation such a system of free schools as will produce the greatest benefit to the whole community and this can be most successfully done by furnishing instruction in every department of useful knowledge, so that the pupils shall be prepared to perform their duty to the community in whatever sphere they may be called to act. During the past few years there has been a growing complaint that the instruction in the schools has not been sufficiently practical, and that too little attention is given to industrial training of the pupils. If this is so, then undoubtedly it is the duty of those in charge of the schools to correct the existing evil and do whatever may be necessary to secure the desired results."

President Morris then gave a brief recital of the preliminary steps taken in regard to establishing the Manual Training School, followed by a similar account of its history, concluding thus:

The purpose of this kind of instruction is to lay the foundation for trade and mechanical employments, and at the same time to recognize the value of intellectual discipline, and thus by a parallel course of instruction to train the hand and head. The general result will be an increasing interest in mechanical industries and practical arts, more intelligent workmen, more successful manufacturers, and more useful citizens.

It will be seen by what follows that drawing is the only form of industrial training in the city schools; but it also appears that the School Board is fully alive to the desirability of extending industrial training in the elementary schools and to give to girls equal advantages to those now given to boys of high school grade.

INDUSTRIAL TRAINING FOR GIRLS.

Whilst the boys of the public schools have been provided with the opportunity of manual education, it is to be regretted that no like promise has been made the girls. The Board of Commissioners fully appreciates the obligation, but has not been able to obtain the required authority from the City Council to introduce sewing into the schools. A special effort was made last year by petition, showing the value and importance of giving this kind of instruction to the girls, but the City Council declined to take formal action in the matter, and thus the Board is prevented from performing a plain duty to a large class of pupils. Similar instruction is given in the public schools of other cities as a part of the regular course of study, and the teachers report that the benefits resulting from it are apparent in the children's clothing in school and are felt and appreciated in many homes. The cost of this instruction is small, and no better investment of public money could be made. Though this kind of instruction may not have been within the original scope of our system of instruction, yet there is no reason why it should not be included, if it can be made useful to the children. There can be no doubt of its value as a part of female education, and this is generally admitted by its introduction in private as well as public schools. Many pupils may never have the opportunity of acquiring the knowledge at home, and must therefore grow up in ignorance of what is indispensable to every woman, whatever her circumstances may be. The earnest action of this association in behalf of this important branch of industrial education may induce the City Council to give the necessary authority to the Commissioners to introduce sewing in the schools during the coming year.

DRAWING.

Drawing is taught in all the public schools, under the direction of special teachers, assisted by the regular teachers. It is impossible to accomplish all that is desired in this important branch of industrial education in consequence of the limited time given to instruction. The subject is now receiving the earnest consideration of the Board and it is hoped that some arrangement will be made at an early day by which better results will be secured.

KINDERGARTEN.

The Board has also considered the subject of organizing kindergartens as a part of our system, and application has been made to the City Council for authority, and the necessary appropriation to sustain them. The plan proposed was to establish four schools of this character—one in each section of the city—and to select experienced teachers for their direction. No action has been taken on our application, and the Board, therefore, has no power or means to establish these schools. It is regretted that the importance of this system is not fully appreciated by those on whom we are dependent, and again it seems proper to invoke the aid of this association, asking those in authority to furnish the means to establish and sustain the kindergarten as a part of our school system. The teachers in charge of these schools say that they promote the physical health of the children, quicken the faculties, cultivate habits of neatness, cleanliness, industry, and kindness, and that these refining influences extend even to the parents. There is a large number of children in our city, under the school age, who would be benefited by this kind of instruction, and it is our duty to renew the effort in their behalf.

It is impossible to fully or fairly present the subject of industrial education in connection with our public schools in a brief paper, limited to a few minutes in length, and much must therefore be reserved for future discussion, when we are endeavoring to reach practical results.

Professor Newell's paper, read by Dr. Richard Grady, follows:

STATE NORMAL SCHOOL METHODS.

The State Normal School has not been able to do much for the industrial education of its students. Founded nearly a quarter of a century ago, its curriculum is to a certain extent limited by the ideas which prevailed at that time, and industrial education as now understood was then hardly thought of. Still something has been done practically as well as theoretically. At the foundation of all technical education lies a knowledge of drawing. The first instructor appointed after the principal was the drawing master, and drawing has always held a high place among the principal studies. Good judges have thought that blackboard drawing is a specialty at this school. Twenty years ago chemistry was usually recited from a text-book and illustrated by experiments performed by the professor. For many years at this school every student has been required to make his (or her, for nine-tenths of the students are women) own experiments. The study consists in doing, making, describing, and reasoning from the facts developed. These two studies, drawing and chemistry, have afforded up to this time the only opportunities for the industrial training of the young men.

FOR THE GIRLS.

For the women two others have been added, needlework and cookery. Needlework is taught systematically and thoroughly, beginning with the alphabet of the art, plain sewing, and proceeding by definite steps, under a competent instructor, to the intricacies and niceties of fancy work. It will be scarcely believed that many young ladies over sixteen years of age hardly know how to thread a needle when they first come to school. Yet after two years' practice, one hour and a half a week, most of them become expert needle-women, and all are able to give instruction to children in plain sewing. Instruction has also been given in cutting and fitting, and with good results so far, though the time has not been sufficient to permit a positive expression of opinion. Cookery has been taught simply as a branch of chemistry, and only to the graduating class. The class is generally so large, that all cannot have as ample opportunities for practice as are desirable; but all understand the principles of baking, boiling, roasting, frying, stewing, etc. The day before last commencement the graduating class invited the teachers and the members of the State Board of Education to a dinner prepared exclusively by the lady graduates. Eighty persons sat down, and the bill of fare was one that Barnum would not have been ashamed of. The menu cards were hand-painted on the covers by students, and the presswork was done in the building by the young men of the class.

THE BALTIMORE INDUSTRIAL EDUCATION ASSOCIATION.

The result of the above preliminary conference upon the subject of Industrial Education was the organization, under the above title, of a society of like purpose with those of New York City and of New Jersey.

This was effected at a similar meeting, convened in the hall of the Johns Hopkins University, Tuesday evening, November 1, 1887 (reported in the Baltimore Sun of November 2). This meeting, largely composed, like the former, of representatives of the several charitable, industrial, and artistic institutions, was called to order by Dr. Richard Grady. President Daniel Coit Gilman, of the University, was called to the chair, President Gilman then gave a succinct statement of the claims of manual training to consideration, and of the practical difficulties surrounding the new movement.

* * * * * * *

The importance of manual training, as a part of the education of every person, is now so thoroughly understood, that not a word need be said by way of emphasis. From the kindergarten to the university teachers are engaged in training the hand to skillful operations, and are thus training also the eye, and likewise the brain. Were manual instruction to disappear from our educational system, we should go back one hundred years. At the basis of all such training in the school-room stands the art of drawing, and it is now generally admitted that every person who learns to read and cipher should also learn to use—even if it be in an elementary way—his pencil and crayon. In addition to this, every possible variety of hand-craft admits of discipline. From the simple occupations of the infant school, half work and half play, in braiding, modelling and cutting, up to the complex tasks of the most accomplished intellects employed in the construction of intricate machines, the erection of great buildings, the critical operations of surgery, and the varied arts of the sculptor, painter, and etcher, manual training is essential. All these points are generally admitted, and certainly we need not occupy this evening in their discussion. Our difficulties arise when we attempt to define the methods which shall be employed in providing the training, and to determine upon whom the responsibility rests. Such difficulties can only be solved after some experience and much deliberation. It is still an open question how far the public schools ought to undertake this new department of work. It is still uncertain how teachers may be best trained for carrying on such instruction.

Closing with a brief statement of the organization and purposes of the "Industrial Education Association" of New York City, President Gilman introduced Dr. Nicholas Murray Butler, the president of that association, who, in a carefully prepared address, gave a most interesting account of the organization and growth of the New York Society.* Dr. Butler said:

The educational question which the meeting is to consider is of the most general character. It interests every one of the 18,000,000 of school children in this country and their parents; every one of our 300,000 teachers; every one of our 750 faculties of collegiate and higher instruction. It especially interests every one who contributes to the $85,000,000 that we spend annually in this country for public elementary schools.

After stating at some length the arguments in favor of industrial education, Dr. Butler proceeded to describe the New York Association, which had its origin in a movement for a "Kitchen Garden Association," begun in 1880. This, after three years of successful operation, was merged in the new organization with larger scope, the result of the experience acquired. The exhibition of children's work, held during the first year of the new society, gave a great impetus to the cause of industrial education and to the development of the association, which has so grown as to lease the large building in University Place formerly occupied by the Union Theological Seminary, where classes in drawing, carpentry, sewing, and cooking are held, as well as a kindergarten and a domestic training department.

An educational library, a reading room, the museum, and a public lecture course are all carried on in connection with the work of the institution." * * * Our association is now prepared to furnish the outlines of an elementary course in wood working and in sewing, and three courses in cooking.

In conclusion, Dr. Butler reminded his hearers that drawing was the basis of all industrial training; he urged the importance of a properly graded course in manual training; then, after deserved recognition of the value of their City Manual Training School for the older pupils, he urged that provision be made for the younger scholars, 24,000 of whom are in the primary grades, and advised also the opening of public kindergartens.

This address was followed by a very interesting paper, entitled "A review of two years' work in the public cooking school," written by Miss Amy Morris Homans, of Boston, and read by Dr. Grady.

At the conclusion of the addresses the Baltimore Industrial Association was formed, with a board of managers, consisting of Messrs. Col. William Allen, George P. Coler, Prof. Otto Fuchs, Dr. Richard Grady, Dr. R. H. Goldsmith, Hon. J. Morrison Harris, F. D. Morrison, Miss S. E. Richmond, Miss Helen J. Rowe, Dr. Jas. Carey Thomas, Levi Weinberger, Joseph M. Cushing, Joshua Levering, John T. Morris, Dr. Ira Remsen, and N. H. Hatton.

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* Further reference to this address will be found in the account of the New York Society, given in a later chapter of this Report.

CHAPTER XV.

EXPERIMENTS IN SOME WESTERN STATES.

Report made by the President of the Chicago Board of Education — Argument against Trade Schools, and the teaching of trades in public schools — A Manual Training public school inexpedient — How the advocates of Manual Training meet these objections — Drawing well established in Chicago Schools — The private incorporated Manual Training School of Chicago gives ample opportunity for study of the new methods — School Superintendent Howland on Drawing and Manual Training — A successful beginning in Mechanical drawing and woodworking made in the High School in 1886 — Peru, Illinois — A special account of the origin of Manual Training experiments prepared by Superintendent Barton for this Report — Programme of course of lessons running through two years — The girls given a similar course in suitable industrial training — Programme of sewing lessons for girls — Iowa — Superintendent Akers on Industrial Education — Its importance — Its educational value — Benefits to result to the State from its general introduction in the schools — How technical skill enhances productive values and enriches a community — The manufacture of American watches, an instance in point — The Department of Mechanical Engineering attached to the State Agricultural College — The class of Manual Training schools possible in towns and cities — Michigan — City of Detroit — Superintendent Sill, on the value of drawing in the schools — Tendency of the study to constructive work — Expresses confidence in the sure coming of more definite industrial training in the public schools — Minnesota, City of Minneapolis — Letter from Superintendent Bradley — Report on Manual Training made to the City Board of Education, November, 1886 — Recommendations made by Professor Crombie, principal of High School — Experiment begun in February, 1887 — Wisconsin, City of Eau Claire — Account of the experiment in the Free High School given by J. F. Ellis, Esq. — The experiment declared a success — Milwaukee — Drawing long since established in the schools under the intelligent direction of Superintendent MacAlister — The movement for Manual Training in the City.

ILLINOIS, CITY OF CHICAGO.

In the Thirty-second Annual Report of the Board of Education of the City of Chicago, for the year ending June 30, 1886, the result of the first year's experiment in the introduction of manual training in the high schools is given.

In the following extract from the report of the president of the Board it will be seen that there is not entire concurrence as to the wisdom of this step. In fairness to the president it should, however, be stated that, in the pages immediately preceding, he argues at length in favor of a liberal view of what should constitute a common school education, in opposition to those who would confine it to the barest elements of education; and, further, points out that the Constitution, the Legislature, and the Supreme Court of the State have each carefully avoided any such definition of "a common school" as would so limit it. The principle seems to be recognized by the law-makers and the courts, that the common schools of the people shall keep step with the advancing intelligence and demands of the people.

As the president argues against the legality of some forms of the new movement, so far as they relate to the common schools, his position on the whole question might readily be misunderstood without this statement.

During the past few years the tendency has been too much towards the practical; the ideal has been thrown aside, and everything is being measured by a gold and silver standard. Educators even are being whirled down the stream, and learning is being measured by its value in dollars and cents.

Gentlemen, you have also been influenced by the same spirit during the past year; I regretted to see you fall into the steps of the Boards of other cities, and introduce manual training into our schools, for thereby, I believe, you have exceeded your legal authority. It is far from my purpose to deprecate the value of the mechanic's art. No calling under the sun is more honorable than that of the carpenter, the mason, and of all those artisans who lay the foundation stones of our homes, schools, and cities, and of our civilization. But there are many reasons why the manual training school should not occupy a place in our public schools.

OBJECTIONS STATED.

First. It is contrary to the spirit of our law. The people did not intend that we should build and maintain universities by taxation. The Constitution does not give us that right. What greater right have we to maintain trade schools? No one will contend that the use of the trowel comes within the definition of a common school education, any more than he would the use of surgical instruments. The common schools ought to commence with the rudiments and give to all the foundation stones for a fair education, viz: reading, writing, arithmetic, history, geography, physiology, the laws of health, and such few branches with these as are necessary to satisfy some sentiment and elevate some imagination, so that, even if the manual training schools were expedient, I think it is questionable whether under our laws an appropriation for them is constitutional. Surely no public trade schools were ever contemplated by the people when the Constitution was adopted, and none were in existence in this State at the time.

Second. The manual training school is inexpedient in our public schools. If one examines carefully the work at present assigned to the different classes, and as now pursued, he will find that not many hours during the day are wasted or given up to play. No one has ever been heard to complain that we teach too little, or do not give enough work to the children. In fact, the complaint has been rather that children were overworked. The fact is, that the children have as much as they can do to master the studies pursued at present. If, then, all the branches taught at present are to be retained in the courses of either primary, grammar, or high schools, I do not see how it is possible to make additions to the courses, and to expect the work to be done thoroughly. But granting that you should drop one of the fundamental studies that are now taught, and substitute for it manual training, what are you going to accomplish? Are you going to turn out masons, carpenters, and engineers? Are you going to make a carpenter of every second boy? Perhaps the boy wants to become a butcher, and his parents may think him cut out for a lawyer or a doctor. Would they not have a right to demand of the Board of Education that it instruct their child in the principles of common law or the use of surgical instruments? You have no right to give preference to one trade or profession.

You will not be permitted to discriminate; and by what criterion will you select the candidates for your different trades? I submit it to you as an insoluble problem. But granting that the problem could be solved, and that you could tell from the shape of one's fingers, or from the bumps on the cranium, just what one ought to be; even granting that the schools should be proven practical and expedient, the establishment of such a large number of schools (workshops), with the number and diversity of tools, instruments, and the extra teachers required, would cost a fabulous sum, so large that it never could be justified or obtained.

THE PROPER FUNCTION OF THE PUBLIC SCHOOL.

Gentlemen, I submit that it is far better to be conservative. Let us not turn our public schools into workshops. The boys and girls get enough of the practical when hey leave the school house. If the parents wish the boy to learn the use of tools, let them apprentice him in the workshop during the vacation, instead of placing him into the dry goods store as a cash boy. I have no doubt that two months of practical work in a house in process of construction or in any workshop will teach him more than two school years' work in the manual training school as it could be established in our public schools. I think, gentlemen, that we ought not to attempt to turn out good carpenters or good seamstresses. Our duty is accomplished when we turn out young men and young women with a common school education, as contemplated by the laws of this State, such as will enable them to become good members of society.

It is for them to select their future calling; and whether they choose to become mechanics or merchants or follow some profession, the foundation of learning which they ought to obtain in our public schools should be of such a character as to benefit them all as nearly as possible in an equal degree. * * *

ADOLF KRAUS,
President.

PRESIDENT KRAUS' OBJECTIONS CONSIDERED.

It will be observed that the objections urged by President Kraus, so far as they are general and not confined to a discussion of the Constitution of Illinois, are directed to two points: one, the difficulty of getting time for the new studies without interfering with those now given, or without overworking the child; the other, to the teaching trades or specialties in the common schools. The advocates of the introduction of some forms of manual training in the schools make answer by pronouncing such objections apparent rather than real. They claim, first, that sufficient time for the new studies can be saved by improved methods of teaching the present studies. Second, that the change of employment both rests and interests the child; and, in proof of the correctness of this position, they point to the experience in the introduction of drawing, against which study these same objections were strenuously urged.

In reply to the final objection urged by the president, they fully agree with him; they would simply add to the instruction in the elements of a literary education now given in the common schools similar training in the elements of industrial education; in neither case attempting to teach professions or trades; but, in both cases, aiming to give the pupil the best preparation possible for after training either in special schools or in practical life. In suggesting that school boys be put at trades during their vacation in order to get practical experience, the president apparently forgets that the rules of the trade unions prohibit this; and that it is because any possible opportunities to learn any mechanical industries are practically denied to the vast majority of American boys, that this movement for giving some form of industrial training in the public schools has so rapidly met with general favor.

The educational value of drawing, and the fact that training in the simplest elements of industry can be made an efficient aid in education, form the strong arguments, from an educational point of view, in favor of these new studies. Drawing has long had a secure foothold in the Chicago schools.

In the Chicago Manual Training School, an incorporated institution under the charge of Professor Belfield as director, the public and the school authorities have the best possible opportunity of making themselves thoroughly acquainted with the new methods, and of coming to an intelligent conclusion as to what features of this school may be wisely adopted in the public schools.

No mention is made in this report of any movement for teaching sewing, or of giving to girls any form of industrial training.

The topics of drawing and manual training, as treated by Superintendent Howland, are given in the following extracts from his report for 1885–'86, in the Thirty-second Annual Report of the Board of Education:

DRAWING.

The importance of Drawing in the public schools has often been urged, and can hardly be any longer a subject for discussion. In almost every branch of study pursued is its influence felt for good; and out of the school room no workman can hope to advance beyond the position of the common laborer without some skill with the pencil and the crayon, with the attendant culture and power of discernment.

Through the efforts of the Committee on Drawing there was a large increase in the number of pupils availing themselves of its advantages, especially in the higher Grammar and the High School grades.

In the High School I think, there is too much copying from flat models, and not enough drawing from objects and designing, for the best interests of a majority of the pupils. Better results may be obtained in school, but less of the art that shall be useful in the after life. In the lower grades there is too much technique for the age of the pupils.

The Chicago schools have a permanent exhibit in the Museum of the Industrial Education Association in New York, which is attracting public attention and doing much for the cultivation of this most important art in the schools of the country.

MANUAL TRAINING.

The subject of Manual Training in our Public Schools is *the* subject which to-day demands the most careful consideration, and the wisest thought of those to whom the direction of our schools has been delegated. Much attention and discussion have been given to this question during the year, and it was determined to make an experimental beginning this present year. A convenient room has been furnished, with benches and tools, for pupils of the first grade in the High Schools. Some seventy pupils are at present engaged in mechanical drawing and bench work in the afternoon. The interest manifested and the progress made has thus far exceeded our highest expectations.

The greatest benefit of this work, in my opinion, is the habit of industry formed and the dignifying of labor. The study of things rather than of words, and the application of philosophic principles to daily labor is by no means to be overlooked.

But how far this work is to go is now an all-important question. This bench work should not begin much earlier than the High School age. Here the use of the various tools can be efficiently taught with comparatively small expense. Whether the forge, and all kinds of working in iron, are necessary, may well awaken discussion. The expense involved would be great, and without a fair return in the increased power and intelligence of the pupil, would inevitably fail of popular approval.

The primary grades are already provided for, but for the older pupils something else, I think, is to be devised which shall meet the educational requirements, with a lighter draft upon the tax-payers.

PERU, ILLINOIS.

I am indebted to the courtesy of R. L. Barton, Esq., Superintendent of Schools in Peru, Ill., for the following account of the introduction and development of industrial training in the schools of that thriving Western town, sent in manuscript, in response to a request for such information, February, 1887:

ORIGIN OF MANUAL TRAINING IN PERU.

On the 10th of December, 1876, there was organized here, by the Womens' Christian Temperance Union, a "Boys' Working Club,' which continued during the winter and spring months for three successive years. A shop was fitted up with a dozen work-benches, wood-working tools for two dozen boys, and a dozen tables for scroll-saw work. The tools were in a few cases owned by the pupils who used them, but the mass of them were owned by the ladies' society that started the club.

The fund to begin the work was raised by voluntary subscriptions of $5 each for scholarships, each person so subscribing sending his own children, or selecting destitute ones in case he had none of his own to send.

The general direction of the meetings changed from one to another of the ladies of the W. C. T. U.; these, besides directing the literary moral instruction that was, in small measure, given along with the work, had direct charge of the scroll-saw work. Competent carpenters were employed to give the boys instruction in carpentry.

The meetings were held two evenings a week, from 7 to 8 o'clock, and Saturday afternoons, from 2 to 5. It will be seen that five hours a week were spent in this work, and at such times as not to interfere with their school or their duties.

The undertaking was made self-supporting by cash received for articles made to order, and by annual fairs, which were largely attended, and which netted considerable sums of money for the articles sold at them. Besides these sources of revenue, patrons who were able to do so paid a weekly sum of 10 cents per pupil for the instruction.

It appears that there was no flagging of interest in this work, but, on the contrary, a hearty enthusiasm. The number of boys increased to forty the first year, and to fifty the second, after which many were turned away because no more could be accommodated. Finally, on account of the removal of several ladies who were promoters of the scheme, and who bore a large share of the burden of work, it became too much for those who remained, so the "Boys' Working Club" was abandoned.

To Mrs. E. C. Holmes, who proposed it, and had most to do in carrying it forward, belongs the honor of its origin. She came here from Gloucester, Mass., and may have seen something of the kind in operation there. Such, then, was the beginning of Manual Training for boys in this community. It was in many respects incomplete, was insufficiently provided with tools and material; and the direction of the work shifting from one to another lacked the steadiness and coherence which one able mind would have given it, but it implanted an idea here that has become an interesting and valuable part of our public school course of education.

MANUAL TRAINING IN THE PERU PUBLIC SCHOOLS.

Peru is a thriving little city, of 6,500 inhabitants, on the north bank of the Illinois. A large proportion of its inhabitants are engaged in mechanical pursuits. This fact has, perhaps, aided materially in the establishment of industrial education in our public schools, and in fostering and continuing its vigor.

In January, 1884, Mr. Joseph Carter, then Superintendent of Schools, upon his own responsibility, and with his own money, purchased twenty sets of carpentry tools and ten work-benches, and fitted up the basement of one of the school buildings as a workshop. Besides these appliances, he put into the shop a full set of carving tools, grindstones, oil-stones, vises, clamps, turning-lathes, scroll-saws, augers, brushes, paints, varnishes, etc.

Here the work commenced, and on this general plan has continued ever since.

In the beginning it aroused much criticism of all concerned. Some said that the school board were permitting an additional expense for what seemed useless and impracticable; others ridiculed the idea of engrafting such a monstrosity upon the public schools. But these objections were easily met; the school board did not waver, and Mr. Carter went steadily forward, turning out results which were gratifying to himself and pleasing to all concerned. The people at length have come to understand some of the merits of Manual Training, and now no one has aught but good to say of it.

A year and a half after starting manual instruction Mr. Carter retired from the Peru schools. I was elected to succeed him, and I put Mr. A. R. Jolley, of the High School, in charge of the work. His work has usually been three-fourths of the day in the High School and one-fourth of the day in the shop. This arrangement has been found to work admirably; in my opinion it is much to be preferred to putting the work in charge of a regular carpenter. A fair knowledge of tools and how to use them, plus the knowledge of how to teach, make the best combination for a Manual Training instructor.

There has been no lagging of interest in this department; it still remains with the boys the most pleasing part of their school work.

The work from year to year varies greatly according to the age and skill of the classes; hence it has not been possible to arrange a course of study which could be followed for any great length of time. The main objects kept in sight have been—

1. To inculcate a correct knowledge of the use and care of wood-working tools.
2. To implant the habit of carefulness in accomplishing work.
3. To develop the power to plan work.
4. To teach quickness of perception; to train the judgment; to render the memory exact and reliable.
5. To turn the pent-up energies of the boy into channels of usefulness.

A long train of good qualities follow even the partial course in industrial education which we give. A trained hand and a trained eye, acting in response to a healthy and vigorous brain, will have little cause for solicitude in the struggle for existence.

COURSE OF WORK IN THE MANUAL TRAINING CLASSES IN THE PERU SCHOOLS.

FIRST YEAR, FIRST TERM.

First month.

1. Teach the use of the square in measuring and in laying out right angles.
2. Sawing by line with rip and grain saws.
3. Planing boards to uniform width and thickness with the jack, fore, and smoothing planes.
4. Nailing: the proper holding of hammer; setting the nail; striking square blows.
5. Make a small, plain foot-stool.

Second month.

This time is spent in making a knife-box, or some similar piece,—all the pupils doing the same kind of work.

The use of the back-saw, mitre-box, and scroll-saw are taught.

Third month.

This time is spent upon a boy's sled or some similar piece. The use of the dividers, brace and bit, are introduced here.

The main advance in this step is in passing from soft to hard wood.

FIRST YEAR, SECOND TERM.

1. Plan and make a wash-bench.
2. Lay out irregular curves, and saw the same.
3. Cut chamfers with chisels; make joints.
4. Sharpen and set tools.

FIRST YEAR, THIRD TERM.

Object for construction, a tool-chest. During this term the pupils are taught to cut mitres with mitre-box and with planes; also to construct a box with mitred corners; to use the turning-lathes; to make doubled joints; also mortise-and-tenon joints.

SECOND YEAR.

During this year the pupil exercises his individual preference as to what pieces he shall construct. In this he is guided by his boyish fancies—what is needed in the family, or what he can make and sell to some one. There are finished up such pieces as tables, cupboards, book-shelves, brackets, cabinet cases, flower-stands, step-ladders, etc.

MATERIAL.

Each pupil pays the cost price of the material which he uses; this money, which nearly pays the running expenses of the workshop, is turned over to the school treasurer.

MANUAL TRAINING FOR GIRLS.

A course of training in every way as thorough and as useful as that furnished the boys is given to the girls in our schools. Many girls who owed their skill with the needle entirely to the sewing classes have found ready employment upon leaving school, and have in every case succeeded in satisfying their employers.

This work for girls, as well as that for boys, is optional. The percentage of those taking manual work is about the same in each sex. There is as much enthusiasm over the needle as over the work-bench.

Hand-sewing, once taught by every mother to her daughter, is, since sewing machines became universally used, no longer taught. A valuable accomplishment for girls, and one of a high educational nature, has been thrust aside. This result is unfortunate. Hand-sewing has a place in domestic economy and in the education of girls which machines can never supply.

The sewing class is taught by a regular teacher of the High School, Miss Emma Werley, who has a natural aptitude for such work.

The following is the course of study in sewing in the Peru High School:

FIRST YEAR, FIRST TERM.

1. Teach the pupils:

(*a*) The proper position for sewing.
(*b*) The proper use of the thimble and of scissors.
(*c*) Threading the needle.
(*d*) Knotting the thread.

2. First work:

(*a*) Turning, basting, and sewing plain hems, giving careful attention to uniformity of width and of stitches.

This work is carried on for a month, or until a fair proficiency is attained, and is then followed by—

(*b*) Back-stitching seams, over-seaming and over-casting raw edges. When these are mastered the third step is undertaken:

(*c*) Patching. This work is continued during the remainder of the term.

SECOND TERM.

(*a*) Hemming continued.
(*b*) Gathering and stroking gathers commenced.
(*c*) Sewing the gathers into a band.
(*d*) Darning commenced.

THIRD TERM.

(*a*) The work of the preceding terms continued.
(*b*) Narrow hems, tucks, plain fells, and bias seams of all kinds.
(*c*) Button-holes commenced.
(*d*) Instruction given in cutting plain undergarments.
(*e*) Mending of all kind encouraged.

SECOND YEAR.

During this year the work may be continued, each doing such work as her own wishes may suggest, or as may be needed at her home.

NECESSARY ARTICLES FURNISHED.

Two dozen pairs of scissors and all needles needed.
Time spent each day, forty minutes.

IOWA.

In the latest report by Hon. J. W. Akers, State Superintendent of Public Instruction,* the topic of Industrial Education is treated at some length, accompanied by a brief account of the Industrial Art School of Philadelphia; mention is also made of Professor Thurston's outline scheme for general technical training, followed by brief reference to the following institutions: The Massachusetts Institute of Technology, The Industrial University of Illinois, Cornell University, The Manual Training School of Washington University, St. Louis, and The College of Arts of the University of Minnesota.

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* Biennial Report of Superintendent of Public Instruction of the State of Iowa Printed by order of the General Assembly. Des Moines: George E. Roberts, State Printer, 1885.

The following pages precede the brief notices referred to, and give evidence that in Iowa public attention is being directed to the subject of technical industrial education.

In the following chapter further extracts from this same report will show what has been done in the way of practical work by the scholars, and how such work has been encouraged by the State.

INDUSTRIAL EDUCATION.

In the report of two years ago we referred briefly to this subject. Inasmuch as our remarks then related to the proposition to teach manual industry in our public schools, we are led by the importance of the subject, as seen in its constant and growing agitation, to submit here a more general discussion of the various plans proposed by which industrial training is to be accomplished. The brevity of the reference of two years ago made it impossible to state clearly our views, and on this account probably the impression has quite generally gone out that we are not at all in sympathy with the demand that education shall do more than is now being done or attempted to prepare young people for the departments of industry in which they are to spend their lives.

Nothing could be further from the truth. Our personal sympathies as well as much of our life experience are with the "hewers of wood and the drawers of water." and we desire to do our utmost to make their burdens less heavy, their work less arduous, and their life more prosperous. But if we seek to do this through the agency of our schools, we are at once confronted by many stubborn problems upon the correct solution of which our success will depend. The importance and the necessity of the early training of the physical as well as the intellectual man is fully recognized, and it is the plain and imperative duty of the State to devise some means by which these two phases of education may be simultaneously carried on. Whatever the plan of accomplishing this may be, it must not only leave the common school intact, but it must supplement and strengthen it in its proper and legitimate work of improving the mental and spiritual nature of the child. It will, no doubt, be necessary to modify our present methods, and in some respects to curtail the work now being done in the common schools, so as to permit of a close connection and co-operation with such schools or workshops as may be established for teaching the elements of mechanics. This can be done without difficulty, and will be done so soon as the additional and necessary facilities are provided.

It is believed that the public mind is prepared for the change, and it should come without unnecessary delay. Nothing is more clearly settled than the fact that we are failing to cover the whole field of proper, necessary, and legitimate education.

DEFECT IN PRESENT METHODS OF EDUCATION.

We are addressing ourselves to but one phase of education to the almost total neglect of the other, which is perhaps of equal importance. The aim of education is to-day, and has been in the past, to improve and enlarge the understanding. We are seeking to do this through the eye, the ear, and the hand. No doubt we are depending too largely upon the eye and the ear to the neglect of hand culture. In the primary, intermediate, and grammar grades of our schools this is unquestionably true. If our aim be only to develop the understanding, one of the most powerful aids will be found by bringing the hands of the pupil into actual contact with objects. Simple handling, however, will not suffice. The hand must be taught to give shape and form to the object in order to contribute most largely to the development of the understanding. In other words, construction is essential to manual training. Object lessons, once so popular, failed simply because of the fact that, while teaching, they did not train. It is, however, as a means of expression that manual training is seen to be of transcendent importance. A high state of development of the understanding is a great blessing to the race, but in the skilful expression of it is to be found almost every source of revenue. A man may understand the principles of mechanism involved in the construction of a wagon—he may have a mental picture of each of its separate parts and a knowledge of their several relations, and such knowledge is of the highest order—but if he has not been so trained that he can make a wagon, it will be difficult for him so to use that particular knowledge as to contribute to his own immediate necessities, much less will he be able to aid in the progress and improvement that ought to be made in the manufacture of wagons. In other words, we should seek through industrial training to accomplish progress and improvement in all arts, mechanical and other kinds, by the skilful expression and general employment of the knowledge we acquire by the education of the mind, and which, when it is not so employed, occupies our faculties to little purpose.

VALUE TO THE MATERIAL INTERESTS OF THE STATE.

Industrial education should be fostered and encouraged not only in the interest of the individual, but because the State at large would receive incalculable benefit as a result of it.

The natural advantages of Iowa are excelled by no State or nation on earth. Her citizens should be prepared to avail themselves of these advantages. Every possible limitation should be removed, whether such restriction lie in the realm of mind or in the coarser field of matter. All mechanical appliances that exist should be utilized, and the ability to invent others should be cultivated. Agricultural products, large as they now are, should be vastly increased by a more economic use of those elements by which they are created. The mining interests of the State could, no doubt, be greatly enhanced by that skill which the general diffusion of mechanical knowledge would produce. Horticulture, a thorough acquaintance with which should enable the citizen to supplant the product of an acre of ground, the commercial value of which is $15, by the production, at like cost, of that which would bring $100 in the world's markets. Our flax, our straw, our wool, even our clay and sand, should be manufactured into articles, the value of which would enrich the entire Commonwealth. This is not a utopian dream, but lies within the possibilities, yes the probabilities, of the near future of our State, if proper means are employed to imbue each succeeding generation with the spirit of industry and so to educate the people as not only to increase knowledge but to secure its profitable application and use.

HOW THE NEEDS OF THE WAR QUICKENED INVENTION.

The neglect of industrial education laid an embargo upon the development of many interests in this country prior to 1860, at which time we may date a sort of renaissance in the mechanical products of the United States. Manufacturing establishments sprang up all over the land, though in the face of an internecine strife that would have paralyzed a less robust nation. The experiments made in some of the Eastern States as early as 1851 had borne fruit in calling attention to the need of the nation in these directions. Yet, in spite of these efforts, skilled artisans were imported from Europe to supply the demand of our rapidly growing manufacturing interests, and must still be so imported. One single industry that has mainly come into existence in this country within the last quarter century admirably illustrates this wonderful growth.

The manufacture of American watches alone would by its revenue repay the entire State and national outlay made for the encouragement of mechanical industries. To be more specific, what general plan of imparting manual instruction in connection with our common schools is at all practicable? Let the State take the initiative, and thus set an example to the counties and municipalities. A good beginning has already been made.

THE NEW DEPARTMENT IN THE AGRICULTURAL COLLEGE.

About 1869 the Iowa Agricultural College established a course in mechanical engineering. Previously there had been a shop connected with the college, but it was made of service in purely utilitarian work for the college, which was chiefly concerned with agriculture. While repairs were being made and other work done the students had opportunities to earn wages and learn the use of tools. On the reorganization of the college, instruction in branches contributing to mechanical knowledge was arranged in a course by itself, which followed closely the agricultural course for a year and a half, and then was characterized by special studies in the mechanic arts. The work in the shop consists of a series of exercises, such as are involved in the construction of models and simple pieces of apparatus, and has become more regular and systematic. It is required for two or three hours per week during freshman, junior, and senior years. Much work is done in the mechanical laboratory during junior year, and the study of steam occupies considerable time during the senior year.

This department of the college should be strengthened and enlarged, and a similar department should be added to the State University at Iowa City.

THE FURTHER DEVELOPMENT OF TECHNICAL EDUCATION SUGGESTED.

In addition to this, the State should establish at least one great industrial school, where large numbers of young people could receive that training which would fit them for the position of masters or foremen in shops connected with public schools, to which reference will be made further on. The Legislature should so amend the law as to permit of the creation of such departments in connection with county high schools now provided for by statute. Cities and towns of a specified population should also be empowered to establish industrial schools or workshops, to be connected with and form a part of the school system of such cities and towns. These industrial schools should be in charge of competent teachers in those departments of mechanics to be taught in them. The organization of classes in the public schools would serve as a basis of classification for the new department, and the daily programme should be so adjusted that classes could pass from one school to the other without friction or interruption.

This plan has been tested, and the results have been even more than was anticipated.

MICHIGAN, CITY OF DETROIT.

The following extracts from the latest report by Mr. J. M. B. Sill, the Superintendent of City Schools, to the Board of Education,* although containing no account of direct industrial training in the schools, other than in Drawing, still show the tendency to direct this study more and more to practical results in construction.

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* Forty-third Annual Report of the Board of Education of the City of Detroit, with accompanying documents, 1885-'86. Detroit: James Markey, Printer, 1886. Pp. 188.

In two schools the fact of the making of articles by the scholars is noted. The comments that follow on Industrial Training show that the Superintendent himself is quite ready to accept and promote the new movement in education.

DRAWING.

During the year just closed better progress than ever before has been made in this important branch of study. The special teacher in this department has succeeded in bringing teachers to a more complete understanding of the educational value of drawing, and pupils have shown a most encouraging interest in their work. The progress of classes has never before been so steady and satisfactory or the department in so excellent a condition.

It gives me pleasure to bear testimony to the wise and skilful management and the excellent sense and judgment which the special teacher has exhibited in her direction of the work in drawing.

Changes of teachers in departments like drawing, penmanship, etc., are in themselves especially undesirable, usually involving a sad waste of time in learning new methods, and, if the teacher displaced has been acceptable, great and unfortunate discouragement. No matter how efficient the new appointee may prove to be, it seems to me that this department must suffer at least temporarily from the change in administration recently made.

The following report of the condition of this department is submitted by the teacher in charge during the year:

"The results in drawing, as shown by the usual term's examination of books and slate work, has been marked and progressive. The year bears record of a broader intelligence, quickened by keener observation and judgment on the part of pupils. Thought characterizes the work in all grades and gives to this branch its importance as an educational factor.

"The continued development of this study as a science incorporates it with the useful arts as opposed to the olden-time accomplishment of picture-making, and is fast doing away with the notion that special aptitude is required by pupils to insure success.

"Every year the chasm lessens that separates drawing from other studies; and many teachers have generously acknowledged the interdependence of this with others of the school course. Since drawing is directly opposed to inaccuracy of form, confusion of detail, and indecision in expression, its province is rather to assist than to infringe upon the time allotted for writing, language, etc.

"The work in all grades has been limited to outline drawing, the elementary stage of expressing form, and the means to this end have been mainly pencil and paper. Some teachers, however, have tried with success the cutting of exercises in paper and wood. By this means form becomes a reality, and the pupil gets the pure concept of the object he is fashioning. An experiment was tried in the seventh and eighth grades by allowing pupils to make their own working drawings and then to carefully construct their object from the drawing.

"The really workman-like manner in which large numbers of knives were made, and in one school miniature chairs most delicately framed and finished, was very creditable to the busy hands employed in shaping them.

"Books from each grade have been selected, and in many cases the entire books of a room, showing the comparative work of pupils in classes. This has taken the place of the usual annual collection of specimens, which, by special preparation, might have been made more elaborate. But as this work represents the honest, everyday effort of the pupils for the term, I would especially commend it to your careful inspection."

INDUSTRIAL TRAINING IN THE SCHOOLS.

More and more every year this subject engages the attention of progressive educators. I cannot at present enter into a discussion of its merits. Experiments, mainly very satisfactory, are in progress in many cities, and the idea is rapidly growing in favor. Perhaps Detroit can afford to wait for a further showing of results elsewhere, but her time will, I believe, come, and her school work will some day include systematic training of the hand and eye as well as of the mind and heart.

MINNESOTA, CITY OF MINNEAPOLIS.

A statement in the Annual Report for 1884–'85, by Superintendent Tousley, that the Minneapolis Board of Education were then considering the subject of industrial education, led to a letter of inquiry, addressed to the present Superintendent, John E. Bradley, Esq., which was responded to in the following letter, which, with its enclosure, gives the latest information, and shows that this enterprising city has already made a modest beginning, by introducing in the High School some training in the use of wood-working tools.

The amount of instruction proposed and the estimate of probable cost of introducing the new study shows that in many towns and large villages similar opportunities can readily be afforded; so that all the advantages of the new studies for boys need by no means be confined to city schools, while some training in domestic industries for girls can be given in every school house throughout the land. To instruct the girls in sewing, cooking, and in some knowledge of household duties and economies, requires little in the way of costly fixtures, if only the teacher be capable, ingenious, and in earnest.

MINNEAPOLIS, MINN., *January* 11, 1887.

MY DEAR SIR: In reply to your letter of January 7, I would state that the records do not show that the subject of Manual Training (or "Industrial Training") was ever formally before the Board of Education till November last. Undoubtedly Professor Tousley meant by his remark in the report referred to that it had become a subject of conversation.

Soon after I came here, in September, 1886, I expressed to the Committee on Course of Study the interest in the subject which I had long felt, and found no great difficulty in interesting them in the project of manual training. I enclose a slip, cut from the "Minneapolis Tribune" of January 1, 1887, giving my paper on the subject, which was presented to the Board of Education of this city about November 1. Of course this is but a beginning, and I hope ere long to have sewing taught to the girls and certain uses of tools to the boys in all the schools.

I cannot mistake in assuming that this is a step in the right direction, and meets a widely felt need, when scores of papers have been sent to me quoting with warmest approval my suggestions and plan.

I remain, with great respect, very truly, yours,

JOHN E. BRADLEY,
Superintendent of Schools.

Col. I. EDWARDS CLARKE,
United States Bureau of Education, Washington, D. C.

CONCERNING MINNEAPOLIS SCHOOLS.*

The most important innovation, however, to be adopted in the coming year (and it is a thing of real magnitude) is the determination to engraft a school of manual training upon our public school system. The suggestion came from Dr. Bradley, and was submitted to the board at the regular monthly meeting in November last. The scheme is best described in Dr. Bradley's own words. Dr. Bradley presented the following communication at the meeting in question:

REPORT ON MANUAL TRAINING.

To the Board of Education of the City of Minneapolis:

GENTLEMEN: By the request of the Committee on Text and Course of Study, I have prepared for your consideration the following report on the introduction of Manual Training into the Minneapolis High School. I invite your attention first to what has already been done in other places, and, second, to some of the benefits which may by expected from the step proposed.

HOW EUROPEAN GOVERNMENTS PROMOTE TECHNICAL EDUCATION.

No feature of the educational systems of France, Germany, and Switzerland is more noteworthy than the attention which is given to industrial training. More than half a century ago France established special schools of technology for the purpose of fitting young men to superintend and develop her various industries. Men were educated for their future callings, and persons possessed of superior qualifications were thus placed at the head of all the leading factories and shops. The result was that her artistic manufactures gained a pre-eminence which in many departments is still retained. A tourist visiting the vast porcelain factories at Sevres is surprised to find that the rules for their management are issued by the Minister of Public Instruction; but, on inquiry, he will learn that these works are conducted primarily as a great educational institution, and that the commercial value of their immense product is held subordinate to the purpose of supplying other establishments with skilled workmen. In like manner Geneva and other cities of Switzerland have developed and fostered their peculiar industries. Thus no one can graduate from the Horological Institute at Geneva till he has proved his skill again and again by making an entire watch of standard excellence. It is the patient training of young men in the minutest details of their calling in such schools that has made Swiss watches celebrated throughout the world.

REPORT OF THE ENGLISH ROYAL COMMISSION ON TECHNICAL INSTRUCTION.

A commission of excellent scholars and statesmen appointed by the British Government "to inquire into the instruction of the industrial classes of certain foreign countries in technical subjects, and into the influence of such instruction on manufacturing and other industries," has recently reported, after visiting sixty-three cities of Continental Europe and twenty-five cities of Great Britain, that industrial training is rapidly extending in every leading country of Europe. The report dwells with emphasis on the value of schools for the training of foremen, and shows that establishments supplied with skilled and intelligent superintendents possess a great advantage in competition with factories whose managers are lacking in either manual or mental training. Indeed, the demand for men possessed of a practical as well as theoretical training to fill positions of trust and responsibility has largely diminished the demand for men of high but purely scientific attainments.

EUROPEAN EXPERIENCE ENCOURAGING.

I have thus glanced at some of the attempts at industrial training which have been made in European countries, because their undoubted success affords encouragement to believe that manual training will be equally successful here, and because we may be guided in many particulars by the experience of older institutions. Much has already been done in this country, and initiatory steps have been taken for the introduction of such training in many of our leading cities. The interest manifested by the prominent nations of Europe is rapidly imparting itself to America, and a leading question with educators now is: How can industrial education be most successfully engrafted upon the public school system in the United States? and the more men have reflected upon our educational and industrial needs, the more pressing has seemed the necessity of finding some means by which the education of the hand may join with the education of the head.

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* From the Minneapolis Tribune of January 1, 1887.

SUMMARY OF VARIOUS AMERICAN EXPERIMENTS.

In St. Louis, Philadelphia, Chicago, Toledo, and other cities large and successful manual training schools have been established. In New York,* Boston, New Haven, Omaha, and many other places industrial training has been added to the public school system. Sixty-six institutions or city systems sent exhibits to the Children's Industrial Exhibition in New York last spring. † Favorable reports on the progress and success of these efforts have been received. One fact which is clearly established is that manual training has not diminished but increased respect for intellectual culture. It has stimulated mental activity wherever it has been introduced. The boy who learns precision and adaptation in the use of tools has also learned a lesson which will serve him in other departments of training, in scientific and literary pursuits, in social and moral relations. He who has conquered difficulties once will more easily succeed a second time. Power developed and applied in one instance is available for other occasions. Character stimulated and re-enforced by honest effort in one pursuit will not fail when brought to the test in higher and more important relations. Felix Adler says: "The doing of one thing well is the beginning of doing all things well."

Another important result of industrial education has been found to be a higher appreciation of the dignity of labor. It cannot be denied that the mechanic and artisan stood higher in public regard a generation ago than they do to-day, and no one can observe the widening chasm which separates labor and capital without the deepest concern. How shall labor regain its former standing and influence? By making it intelligent; by giving it wise and honest leadership. Who will not hail with delight any system of education which will dethrone demagogues and distribute among the workingmen a goodly number of upright and capable leaders? The greatest need of the present day is infusion of calm and judicious advisers among the masses of unintelligent laborers in our large cities. What will tend more directly to accomplish this than to add to the intellectual training given them in our high schools such a knowledge of tools and materials as will enable boys to enter upon a handicraft?

DIRECT ADVANTAGES.

Again, industrial education will enable boys to choose their occupations intelligently. This is a matter of greatest importance, for most perons can choose their callings but once, and an error at this point must inevitably cast a shadow over one's whole life. How many men who might have excelled as skilled artisans or foremen have been doomed to life-long inferiority by the choice of a professional or mercantile pursuit. It is not to be expected that all who have enjoyed opportunities of manual training will become mechanics. Some will find that they possess no aptitude in that direction, and circumstances will prevent others from choosing such callings. But those who have become familiar with the apparatus of the workshop in a training school will possess a great advantage in making this choice upon which so much depends.

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* This was not the case in the city of New York at this date, except that drawing was taught. (Editor.)

† Fifty-four of those from New York City and vicinity were from private schools and institutes. (Editor.)

No consideration in favor of manual training has seemed to me more weighty than the necessity of supplying our various industries with well-qualified and efficient foremen. The apprentice system is a thing of the past. Trades unions and monopolists have combined for thirty years to prohibit men from choosing their own employment, and the tremendous evils resulting from such an interference are upon us. Division of labor and the introduction of machinery have made it profitable for manufacturers to narrow the work of each employé to one minute process, in which dexterity rather than skill is required. Meanwhile the post of foreman has become more and more important. He needs to know the qualities of all the materials employed, and to be familiar with every operation carried on in his department of the works. He who would direct a machine must understand the principles of its construction, must know how to preserve and repair it. And a foreman needs also that breadth of mind and mental-discipline which will enable him to secure the largest possible product and the highest excellence of workmanship from his establishment. In no way can men be more successfully fitted for these responsible positions than by combining with a thorough intellectual discipline an early familiarity with the principles of mechanics and the use of tools. And for the development of this high order of attainments no better foundation can be laid than that which is afforded by the manual training school.

I have thus presented some of the considerations which lead me to recommend the establishment of a manual training school in connection with the Minneapolis High School. Many other reasons for such a step might be adduced did space permit. At my request Professor J. S. Crombie, the principal of the High School, has prepared a plan for combining a course of manual training with the high school course, which is hereby submitted for the consideration of the board. I heartily approve of the plan proposed and recommend its adoption. I am confident that it will be regarded by every public-spirited citizen as a step in the right direction.

Respectfully submitted.

JOHN E. BRADLEY,
Superintendent.

Professor Crombie's reply was read, as follows:

Dr. JOHN E. BRADLEY,
Superintendent Schools:

DEAR SIR: Regarding the establishment of a manual training school in this city I would make the following recommendations:

1. That manual training be introduced in the High School, so far as relates to joinering and carpentering only, and that the room to be fitted up for this purpose be the southwest basement room in the High School building.

2. That this school be opened under the charge of a competent instructor, at the beginning of the second term of the present school year, February 1, 1887.

3. That the number of boys admitted to this school be limited to eighteen; that they be at least thirteen years of age; and that they be selected from the class entering High School February 1, 1887. Should not a sufficient number from this class apply, the necessary number to be selected from the class which entered the High School September 1, 1886.

4. That the work of the manual training school be elective; but that the written consent of the parents be required in every case.

5. That the work of this course for the first half year be divided as shown by the following schedule:

Hours.	Section 1.	Section 2.	Section 3.
8.40- 9.20	Shop-work.	English grammar.	English grammar.
9.20-10.00	Shop-work.	Drawing.	Study.
10.00-10.40	Arithmetic.	Shop-work.	Arithmetic.
10.40-11.00	Recess.	Recess.	Recess,
11.00-11.40	Drawing.	Shop-work.	Drawing.
11.40-12.20	English grammar.	Study.	Shop-work.
12.20- 1.00	Study.	Arithmetic.	Shop-work.

That will give every pupil eighty minutes every day in the shop, forty minutes every day in mechanical drawing, forty minutes in recitation in arithmetic and English grammar each, and forty minutes for study. This will require from one and a half to two hours per day out of school. As the class advances, satisfactory work can be planned for succeeding terms, still giving the above time every day to the shop-work and mechanical or free-hand drawing.

6. That the following appliances and tools be provided: Six carpenter's benches, with bench-screws, vise, and ordinary conveniences. Every bench to be furnished with four drawers with locks and keys; one drawer for each pupil.

Each bench to be provided with the following tools, to be used in common by all classes: One cross-cut saw, 1 rip-saw, 1 steel square, 1 try-square, 1 sliding T-level, 1 compass, 1 mallet, 1 hammer, 1 working-gauge, 1 screw-driver, 3 fore-planes, 1 oil-stone, 1 oil-can, 1 feather-duster.

Also, that every pupil be furnished for his own use and keep in his own drawer the following tools: One jack-plane, 1 smoothing-plane, 1 one-fourth-inch chisel, 1 one-half-inch chisel, 1 three-fourths-inch chisel, 1 one-inch chisel, 1 three-fourths-inch gouge, 1 one-inch gouge, 5 auger-bits, 1 brace, 1 brad-awl, 1 scratch-awl, 1 rule.

Also, 1 good grindstone for general shop use.

7. That every pupil be held responsible for the care and safety of his tools.

8. That the shop be solely for the education of the pupils, and the articles manufactured be not for sale.

9. That the board authorize the Superintendent of Schools or the chairman of the Committee on Teachers' Salaries to visit the manual training school connected with the Omaha (Nebr.) High School, as the work there comes nearest to what is desired here.

I append a careful estimate of the expense attending the opening and conducting of the schools for one half year, from February 1 to June 17, 1887:

Six benches, at $20 each	$120 00
Six sets bench tools, at $13. 50 per set	81 00
Eighteen sets individual tools, at $8. 95	161 10
One grindstone	3 50
Lumber	50 00
Teacher, at $2. 50 per day	250 00
Total	665 60

The actual expenses, after fitting up the room, will be $300; certainly not a large sum. The estimate of the cost of the benches is made by Mr. Brittain; that of the tools, by a hardware firm in this city.

Respectfully submitted.

J. S. CROMBIE.

MINNEAPOLIS, *October* 27, 1886.

The reports were referred to the Committee on Text Books and Course of Study, to report at a meeting to be held Wednesday, December 1. * * *

That is the project. At the meeting of the board on December 1, the committee to which it was referred reported favorably, and it was decided to open a manual training school in February. It will now soon be open, when, with the regular schools, the High School dovetailing into the University, the Evening Schools, and the Manual Training School, Minneapolis will indeed be splendidly equipped from an educational standpoint.

WISCONSIN, CITY OF EAU CLAIRE.

As an evidence of the fitness of some forms of industrial training for introduction in the schools in smaller towns and in country schools, the experiments in the schools of Eau Claire are of interest.

The statement of the results there attained was given in the Annual Report of the United States Commissioner of Education for 1884–'85, by Hon. J. F. Ellis, who is there said to be the "Superintendent of Schools."

The number of scholars in the place is there given as 1,300, with a corps of twenty-six teachers. Number of pupils in the manual training room, twenty, sent in classes of eight or ten from other rooms. The course at first was for only one year. The cost of fittings and teacher's salary for the first year was only $600. The results were so satisfactory that a longer course, with facilities for a larger number of pupils, was thought desirable. In response to a request for later information the following interesting letter was received.

The question of what can be done in small towns and in small remote country schools, is one of the very greatest general interest. Industrial art drawing can certainly be taught; that has been conclusively demonstrated. Sewing can be taught in all and modelling in clay, and some knowledge of farming implements and of the use of tools, while in small towns instruction in the use of mechanics' tools seems practicable.

Mr. Ellis shows how, in a short time, interest in the study has grown in the town of Eau Claire

EAU CLAIRE, WIS., *January* 28, 1887.

HON. I. EDWARDS CLARKE,
Washington, D. C.:

DEAR SIR: I am honored with the receipt of your favor of the 7th instant. I am clerk of the Free High School—not superintendent, as in the clipping indicated

As to Manual Training in our school, I can say, with pleasure, that it is a success. We have now a three years' course, and the boys have entered on the third year with interest and no loss of enthusiasm. The expense of fitting up rooms was not great, and the improvements are permanent, so that hereafter the expense, aside from the wages of the teacher, will be nominal, will not exceed $50 a year.

The number of boys enrolled is forty divided into four classes of ten each. One class occupies the time of the teacher, so that he is employed during school hours in class work nearly all the time, while the boys use all the time during their holidays (Saturdays) in piece-work, that is, doing little jobs or in making something.

We find the work very helpful in certain studies. The boys make more rapid progress and do much better work in all branches of mathematics than boys of that age did when not in this work. Their perceptive and reasoning faculties are sharpened.

In short, the prospect of better men, better intellectually and physically, is apparent in the class in this department.

Our course consists of two years in wood and one year in iron work.

In wood work, the first year is devoted to bench work, and the second year to finishing in bench work and carving. This course might be varied with profit by putting in coloring. By this I mean painting and staining more especially, so that the student could get a knowledge of the composition of colors or paints, and their appearance or adaptability to different woods.

In iron, which was begun this school year, and which will close the course in manual training with the "three-year boys," the work is simply with the forge and anvil. The boys are already doing very nice work in this course.

During the three years a very considerable part of the time is devoted to sketching and drawing (or I suppose it should be called draughting), in which marked proficiency is shown by some and great improvement by all.

I have no doubt of the fact that manual training is the outgrowth of industrial art drawing in common schools, as you suggest.

It is my opinion that it must soon become a part of the common school education of cities of 20,000 inhabitants and upward, and I believe that the outcome of Farmers' Institutes, which are being held throughout this State in every county, will ultimately lead to industrial work in the country schools touching the subject of agriculture.

Manual Training in tool work is not practicable in the country or in small towns to the extent of making it very thorough, for the reason I suggested in my former letter. That is, when the work is completed by one class, the next younger class is too young and feeble to begin the work. The work with tools cannot be reasonably well done by any boy under fourteen years old.

I voice the unanimous opinion of the patrons of our school that Manual Training has come to stay in our common school, and that it is the most important departure in education that has taken place in many years.

Much has been printed in reference to and commending this branch of our school work, but I have nothing at hand.

Very respectfully, yours,

J. F. ELLIS.

MILWAUKEE, WISCONSIN.

I am indebted to the courtesy of R. C. Spencer, Esq., President of the Milwaukee Manual Training Association, for the following brief statement of the fact that such an association exists in that city, and of its purpose, which he states as follows:

"The Milwaukee Manual Training Association" is an organization of citizens to promote the introduction and development of Manual Training in this city; but more particularly to get it into the public schools, connected with which there are now some fifteen kindergartens, a pretty thorough system of drawing throughout the schools, and a good scientific course, with laboratories, in the High School, and a start made toward introducing elementary science throughout all the grades below the High School. All of which our association encourages as a necessary part of a manual training system.

But in order to fully develop the scientific and manual side of our public school education, we desire to eliminate some things that may be very well dispensed with, and modify others which consume an unnecessary amount of time and attention. We are desirous of connecting with the High School suitable shops for teaching the use of tools in the working of wood and iron, and also to provide throughout the system of public schools suitable manual training for girls.

It appears that, as recently as the summer of 1887, no steps had been taken beyond the forming of the association. With drawing well established in the schools, with elementary scientific education so well grounded, and with a number of kindergartens, there would seem to be little difficulty in gradually introducing some forms of industrial training in the lower grade schools. The greater undertaking of establishing a well equipped Manual Training School may not be so easily effected, until the results of the experiment in Toledo and Cleveland are determined.

CHAPTER XVI.

SCHOOL EXHIBITIONS.

Changes in character of school exhibitions mark the progress and change of educational ideals — The Provincial ideal — The Centennial ideal — The Manual Training ideal — The Iowa law concerning exhibitions of pupils' work — The far-reaching influence of the annual meetings of the National Teachers' Association — The Madison meeting in 1884 — Comments by State Superintendent Akers, of Iowa —Iowa exhibitions at Madison and New Orleans — Extracts from Superintendent Akers's report — Iowa State Normal School — Remarks by Principal Gilchrist on Educational Exhibitions — Showing of articles made by the pupils of the public schools of Junction City, Kansas — City Superintendent Webb on Manual Training — Exhibition of the handiwork of public school pupils in Moline, Illinois — Differences noted between the Kansas and Illinois exhibitions — Superintendent Mack describes the Moline methods — Catalogue of the 1886 exhibition — Programmes of the proposed exhibition in 1887 — Account in New England Journal of Education of a somewhat similar exhibition in New Haven, Connecticut — An interesting exhibition by the High School of West Boylston, Massachusetts — Articles shown by the pupils of the Bowditch public school in Salem, Massachusetts — The definite limitations and possible uses of such exhibitions — Valuable as means, as illustrations — Useful to awaken interest and to inform the public — Two notable exhibitions during 1888 in Philadelphia, and in Washington.

NEW MEANINGS TO OLD WORDS.

The change in the meaning of the term that forms the title of this chapter embodies in itself a concise history of the development, progress, present status, and tendency of common school education, and records three distinct eras.

A school exhibition was universally understood, a quarter of a century ago, to mean an occasion when the school, as a school, held a dress-parade, at which the parents and friends of the scholars were present in holiday attire.

These occasions are now generally known as "commencements," and are still held in various parts of the country with much blare of trumpets and extravagant profusion of floral offerings.

A dozen years or so ago, when the notes of preparation for the coming Centennial Exposition began to arouse the educational world, the term, a little shorn of its fair proportions into the uneuphonious form of "school exhibits," signified a showing of all the furniture and apparatus of the school and class rooms, as well as of volumes of pupils' exercises, compositions, writing books, and in some cases specimens of drawings. These latter were, however, mostly confined to the schools of Boston, and those of a few other places in

Massachusetts, with an occasional showing from exceptional cities and towns in other States in which the new study had got foothold under the inspiring leadership of Walter Smith.

Within the past two or three years the term has taken on a new meaning, without, however, quite losing its later significance. It is now coming to be understood as referring to a showing of objects actually made by the school children themselves, thus marking the progress, through industrial art drawing, to "manual training," the latest end and aim of the educational reformers. As the success of drawing led to the movement for the introduction of other forms of industrial training in the schools, so, doubtless, the attractive exhibitions, that had become common, of the work done by the classes in drawing, through all grades of the schools, may have suggested the holding of these modern exhibitions of children's handiwork, though from time immemorial occasional specimens of such work had been shown for the delectation and wondering admiration of the visitors to rural fairs.

As has been suggested in a former chapter, the work of the children trained by Mr. Leland may have led to this recent development, aided immensely by the great showing made in New York, under the patronage of the "Industrial Education Association." In this immense collection, however, most of the articles shown—especially of those coming from New York City, were not made by children in the public schools, though New Haven, Montclair, and one or two remote places, sent collections of the work of their public school children. Whatever may have been the origin of this recent development in the Eastern States, it had another cause in the West, due possibly to the preparations for sending State Educational Exhibitions to the Centennial, as will appear in the case of the State of Iowa.

In the accounts and notices of such showing of scholars' work as have fallen under my observation, these three eras, and their ideals, seem strangely interblended. The early idea of the County Cattle Show or Fair, where the result of the skill or handiwork of the farmers' children was proudly put in competition for the proffered prizes, still survives in the list of specimens shown of scholars' prowess in the Kansas town; the showing made by the State of Iowa at the New Orleans Exhibition repeats the Centennial ideal, while the exhibits of the schools of Salem, New Haven, and Moline, illustrate more or less the latest industrial ideal of training by progressive steps from the pretty colored papers woven by baby fingers in the Kindergarten up to the typical models of wood-working problems made by the advanced pupils in the Manual Training School.

As a distinct phase of the present movement in the public schools, these exhibitions have valid claim for notice here.

It should be borne in mind that evidences of childish activity, or ideas of utilizing it, are not absolutely novel phenomena. Child Labor has not been wholly unknown in the past, if the history of English coal mines and cotton factories has been truthfully set down; and to-day, on the statute books of the State of Connecticut, the laws prohibiting this labor are not by any means obsolete!

The only business which educators have with this phase of child life is in directing these activities most wisely along the lines of the educational development of the child. Schools are primarily to develop and train the mental faculties; muscular development and habits of laborious industry may be secured elsewhere; but for many public school children the only opportunity for arousing and informing their minds is to be found in the school and in its influence and surroundings.

This essential fact is to be kept in mind, no matter what wave of novelty may sweep the great public temporarily from its moorings, if the schools of the people are to serve the great purpose for which they were created.

The following provisions of law, taken from the statute book of the State of Iowa, show that at least two years before the holding of the Centennial Exhibition in Philadelphia, the idea of local school exhibitions had become so general as to be embodied in the laws of a wide-awake Western State. The main idea, as expressed in these provisions of law, seems to be to stimulate and develop the activities of the children in practical employments—in making something useful, "ornamental work" being only encouraged when the child had first made something useful. Whether this originated in the desire to prepare an exhibition to be sent to Philadelphia, or was an expression of the wish of the members of the farmers' granges throughout the State to insure a more "practical" element in the school training of the children, does not appear; the last seems the more probable, though the then able State Superintendent of Education, Hon. Alonzo Abernethy, was especially active in aiding the efforts to secure a general and creditable showing at the Centennial of the educational resources of the whole country, and in his Biennial Report for 1874 and 1875 issued a circular of suggestions to the school and college authorities of the State for the preparation of material for such an exhibition to be sent to his office, to be forwarded from there to Philadelphia.

The following is the text of the laws referred to; passed, to take effect July 1, 1874:

INDUSTRIAL EXPOSITIONS IN SCHOOLS.

[Iowa, Laws of 1874, Chap. 64.]

SEC. 1. It shall be the duty of the board of directors of independent school districts, and the subdirector of each subdistrict, if they should deem it expedient, under the direction of the county superintendent, to introduce and maintain an industrial exposition in connection with each school under their control within this State.

SEC. 2. These expositions shall consist of useful articles made by the pupils, such as samples of sewing and cooking of all kinds, knitting, crocheting, and drawing, iron and wood work of all kinds, from a plain box or horse-shoe to a house or steam engine in miniature; also all other useful articles known to the industrial world, or that may be invented by the pupils, in connection with the farm and garden products in their season, that are the results of their own toil.

SEC. 3. The pupils shall be required to explain the use and method of their work, and kind and process of culture of farm and garden products.

SEC. 4. The parents and friends of pupils shall be allowed and requested to be present at said expositions.

SEC. 5. Ornamental work shall be encouraged when accompanied by something useful made by the same pupil.

SEC. 6. These expositions shall be held in the school-room, upon a school day, as often as once a term, and not oftener than once a month.

In the Annual Report of the United States Commissioner of Education for 1874* appeared the following comments upon this law, in which the credit of the conception of such a movement throughout the whole country with direct reference to the approaching Centennial, is conceded to an Iowa lady:

SCHOOL INDUSTRIAL EXPOSITIONS.

The primary objects of the law providing for industrial expositions are (1) to encourage the development of mechanical and inventive genius, (2) to train to useful handiwork and employment, and (3) to introduce something of technical training in the useful arts in connection with common school instruction.

The enactment of the law is both a recognition by the Legislature of the demand that the public schools shall afford more industrial and æsthetic training and an attempt to provide for it. No provision, however, is made for giving instruction to pupils in these subjects.

Many districts have already availed themselves of its provisions, and with good results. Further experience will indicate what modifications are needed in the law to secure the best results that may be attainable.

In this connection it may be mentioned that Miss Matilda Fletcher, of Iowa, a lecturer and writer of considerable power, has bent her energies upon the establishment of an industrial exposition in every ward and district school in the country, to form the basis of a school exhibition at the Centennial in Philadelphia. Her plan is to set apart one day in each week on which pupils shall bring to the school-room some useful article, raised or made by their own hands, to be exhibited and explained by the producers or makers, under the supervision of the teachers, in the presence of such parents and friends as can be gathered. These articles may consist of farm and garden products, specimens of cooking and sewing of all kinds, iron and wood work, from a box or horse-shoe to fine cabinet-ware or a steam-engine. Selections from the best of these are to be presented at the Exposition in 1876.

The report on Drawing at the Centennial by Mr. Stetson, given in Part I of this Report (see pages 635–689), contains no account of drawings sent from Iowa schools. From the latest report by State Superintendent J. W. Akers,† the following references to the great educational meeting at Madison in 1884, and the account of the educational exhibition made by the State at the New Orleans Exposition in 1884–'85, are taken. It will be observed that attention is called to the educational phase of drawing as to a new feature of the study, and from the comments on the possibilities of industrial training in the schools, which also seem to have been first revealed to the superintendent by the collections shown at Madison, two deductions are suggested—first, that in the mere encouragement to the school children "to make things" there is little educational profit, a conclusion, it must be remembered, stated ten years after the passage of the law authorizing the stated exhibitions of pupils' work, and, therefore, of much significance; and, secondly, that, both from his statement of the effect upon himself, and from the testimony he gives as to the general awakening of interest in educational matters subsequently shown by the surrounding communities, it is evident that the value of the influence of these annual meetings of The National Teachers' Association, held each year in a different city, can hardly be overstated.

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*See "Report of the Commissioner of Education for the year 1874," page 116.

†Biennial Report of the Superintendent of Public Instruction of the State of Iowa. Printed by order of the General Assembly, Des Moines: Geo. E. Roberts, State Printer, 1885.

IMPORTANCE OF THE ANNUAL MEETINGS OF THE ASSOCIATION.

These annual gatherings, bringing together such a multitude of the public school teachers, school officials, and leading educationists of the whole country, and presenting the results of the thought, activity, and experience of the practical educators of the United States, cannot fail to exert a far-reaching influence for good.

These meetings tend both to exalt the profession of the Teacher, by thus blending the scattered workers into a solidarity and community of interest, and to lift up the standard of the Common Schools, all over the country. They do this by the opportunities they afford—for examination of the various collections shown, of listening to the many thoughtful papers read, and of participating in the discussion upon them. In all these ways these meetings serve to widely disseminate a knowledge of the results of the various experiments in school buildings, in school methods, and in new studies—made in far separated communities; thus giving to all the benefit of the experience of each; on the one hand, saving the wasteful re-trial in other communities of educational experiments that have already been proved worthless, while, on the other, they afford opportunities for the rapid adoption of desirable innovations.

THE INFLUENCE OF THE MEETING OF EDUCATORS AT MADISON.

The past two years have witnessed increased activity and zeal on the part of our teachers of all classes. Indeed, I may say that this is quite generally true of the educators of the Western States. The meeting of the National Teachers' Association at Madison, Wis., in July, 1884, was one of the principal causes leading to this result. Such a gathering of educators has never been known in the history of this country, and the influence which it has exerted can not be estimated. In addition to the great good flowing from a meeting representing such an array of talent and experience, and presenting so much food for thought and investigation, in the form of addresses, discussions and criticism, the exhibit of the Industrial Education produced a most profound impression, and awakened a new interest in, and cast new light on, this phase of modern education.

It had come to be quite too generally understood that industrial training, as related to our schools, involved principally the teaching of mechanics and the production of articles of real and practical value. Much real effort has been put forth by many of our leading educators to accomplish this class of work, being in ful sympathy with the demand that our schools should become more practical. But the conditions being so obviously against us, the problem seemed impossible of solution, and there was setting in the conviction, that after all, no real good could come from it. This great exhibit showed, as never had been done before, what a world of opportunities the school-room affords for giving a practical and useful direction to the education of the children.

INDUSTRIAL ART DRAWING.

For instance, drawing has been taught as a means of affording entertainment and amusement to the children, whereas it may and should be studied and taught with a view of acquiring and imparting a knowledge of mechanical and geometrical principles. The fondness of young people for ornamental drawing may also be turned to real and practical account, by the invention and execution of patterns for carpets, oil-cloths, mats, rugs, wall paper and other useful things, combining with beauty the element of utility. The fact that the boy feels that he is making something which will yield a constant pleasure and delight in the use of it, imparts an added interest and zest to labor, and encourages persistent effort to complete it.

Lessons in history, geography, arithmetic, and in fact almost everything taught in schools, may be lessons in form and orderly, systematic arrangement, a most important, practical, and useful element in educational methods hitherto almost entirely ignored in connection with these branches. It not only gives a new meaning to the work, inspires and intensifies expression, secures better attention and more careful application on the part of the child, but the work he has performed stimulates his own pride and his ambition to improve, and educates and benefits all who behold it.

THE DISPLAY MADE BY THE SCHOOLS OF IOWA.

Iowa was well and creditably represented. Great numbers of our leading teachers were in attendance, and many of our schools were contributors to the industrial display.

Prof. Henry Sabin, Superintendent of the City Schools of Clinton, was designated by the National Association to act as manager for our State, and his untiring energy and the ability and peculiar fitness which he brought to the work, resulted in a showing which was, alike, an honor to the State and creditable to himself.

EDUCATIONAL EXHIBITION BY THE STATE OF IOWA AT NEW ORLEANS.

Following closely upon this educational gathering came the great Exposition at New Orleans. At the earnest solicitation of the Commissioner for Iowa, the Department of Public Instruction undertook the supervision of an exhibit of the educational status of Iowa. The material used at the Madison exhibit was re-collected so far as possible (it having been returned to the schools which contributed it). The work was very generally rebound, and the Kindergarten work framed and covered with glass, so far as this was necessary and possible from its nature. The College for the Blind at Vinton and the School for the Deaf and Dumb at Council Bluffs contributed very fine displays of their work, and the contributions of many counties, cities and towns not represented at Madison, swelled the New Orleans exhibit beyond our hope or expectation when entering upon it.

A space of 40 x 42 feet in the main gallery, directly over the space assigned to the Iowa Commissioner on the floor of the Government building, was assigned to the Iowa educational exhibit. By suitable partitions and decorations our space was made very attractive, and was commonly called the "parlor of the gallery." Joining our space on the west was the exhibit of education of the State of Minnesota. When it is known that this exhibit was probably the most beautiful and attractive exhibit of education ever made by any State, it will not seem surprising that Iowa was put upon her metal, and taxed to her utmost in order to make a comparatively favorable showing. Our exhibit certainly received a fair share of attention from the visitors and teachers of all States, and many gratifying commendations from visitors from foreign countries.

The Department issued a circular of information, setting forth the organization and practical operation of our school system, and containing a lithograph school-house map of our State. This map excited great interest, and it is believed accomplished much for the credit of our State which could not otherwise have been expressed. It shows at a glance what Iowa has done in the interest of the education of her children and youth. Every dot stands for a school-house, and there is a school-house in the State for every dot on this map. The Department spent considerable time to arrive at accuracy in this matter. County maps were sent to the county superintendents respectively, with instructions to indicate with red ink the quarter section upon which each school-house in their individual county stood. These dots were transferred to a large map, 9 x 12 feet, the work being done in this office, and great care taken to place the dots accurately and correctly. It is safe to say that there are to-day more school-houses in the State than the map represents, as the data for it were obtained two years ago.

Following will be found the circular of information above referred to, and the report of Prof. T. H. McBride, of the State University, at Iowa City, to whom I desire here to acknowledge my great obligations for his able and efficient assistance, without which the educational exhibit at New Orleans could not have been made what it was. The arrangement of the material for the exhibit was very largely his work.

This circular contained a statistical statement and an account of the public educational system of the State, with the very striking map referred to, in which it is seen that the State is absolutely dotted over with school-houses. The report by Prof. T. H. McBride, "of the educational exhibit of Iowa, at the World's Fair, at New Orleans," contains a list of exhibitors, among whom are the public schools of forty-five separate cities and towns, the State Normal School, the State University, the State Department of Education, the Institution for the Deaf and Dumb, and several private individuals, besides a list of "twenty-seven Iowa authors." In the drawings, map-drawing predominated; there were, besides, some other work in drawing, and a little kindergarten work and clay modelling of relief maps.

The following article from the Times-Democrat, New Orleans, is entitled:

HONORS AND AWARDS MADE IN THE EDUCATIONAL DEPARTMENT.

[From the Times-Democrat, New Orleans.]

The State of Iowa enjoys the proud distinction of being among the foremost in the educational department at the World's Exposition just closed at New Orleans, and the following list of diplomas, awarded for the reasons assigned, speaks eloquently to the lovers of education throughout the State. * * *

The list of Diplomas and Certificates which follows numbers fifty-five; among them are two Diplomas of Honor, one to the State for "Collective Educational Exhibits" and one to the State University.

The rest of the article, which here follows, gives an interesting description of the exhibition.

THE COLLECTIONS DESCRIBED.

The preceding list, affording in almost every case only the briefest description possible, can give the reader no adequate conception of Iowa's educational exhibit at New Orleans. The list is simply a catalogue intended to indicate the general nature of the work displayed. Only those who saw and studied the exhibit in place are prepared to give opinion of its excellence. The material shown was abundant and varied. It came from the deft and willing fingers of our children. The greater part of the work was not prepared especially for the World's Fair; much of it was never intended for display at all, yet all compared most favorably with work coming from schools in which the Exposition had been for months the one thing thought of. The honesty of the display was everywhere apparent, some of the work shown being superlatively good, some fair, and some very poor, altogether revealing exactly what was going on in our Iowa schools on the day the exhibit was collected.

In amount of material displayed, Iowa was certainly second to no other State, while in variety, in what may be called comprehensiveness, her exhibit was unrivalled. Pupils' work was shown from every grade; from nearly every kind of school in the State, from lowest primary to the university, and through it from schools in the city, schools in the village, and schools in the country.

Of the credit gained for the State by this exhibit, it is difficult to form any adequate estimate. The place assigned Iowa was, perhaps, the most prominent in all the educational display, and her school work was the "observed of all observers." The name of our State became familiar to those who had hardly known it before, and everywhere her enlarging fame was associated with her intellectual progress as indicated by the growth and development of her schools. Nor was this the only benefit derived. The stimulus given to educational effort, both at home and in other States, must not be overlooked. Our larger towns now, more than ever, vie with each other in the excellence of work produced. City and county exhibits are the order of the day, and a generous emulation is everywhere manifest. Iowans who visited the exhibit, proud that their schools had done so well, were incited to make them more and more worthy of a world's praise; while citizens of States in which public schools have made little progress, judged the system by its fruits and became its warmest advocates, determined upon its universal introduction and support.

THE MADISON EXHIBITION.

The exhibit derived, in some respects, a decided advantage from the fact that a similar display was made at Madison last July. The preparation for Madison was an experience by which many Iowa teachers knew how to profit. At the same time so much praise was bestowed on that first effort that the State was in danger of resting upon its laurels, and of allowing the opportunity of the New Orleans World's Fair to pass by default. The short time elapsing between the two exhibits also worked disadvantageously, since in many cases the work sent to Madison had scarcely reached home, when similar work was again called for.

However, notwithstanding these difficulties, and some others that need not here be named, the exhibit as it stands may be fairly considered representative. Country schools, graded schools, high schools, colleges, and university are all represented, and taken together present almost every kind and grade of work done in the schools of the State. The work also came from a great many localities, illustrating the same or equivalent grades, in a great many different schools, so that the exhibit is not representative only, but likewise very comprehensive and complete.

KINDERGARTEN AND PRIMARY WORK.

It would be impossible, within the present limits, to give even a brief account of each of the individual exhibits. A few must be selected, which are more prominent either on account of the amount of material displayed, or because of some special attraction. It has been said that all kinds of school work are represented. By no means the least interesting material in this wide variety is the work of primary grades. Many schools, both city and country, show very conclusively how the kindergarten methods and material can be made available in our public school system; and that, too, without the aid of special kindergarten teachers. The Clinton schools make a very handsome exhibit of this kind in form of mat weaving and simple paper cutting.

The district schools of Tama County, the public schools of Belle Plaine and Steamboat Rock, and the city schools of Des Moines, also make exhibits of kindergarten work of various sorts, notably in the form of worsted maps of State and county. In West Des Moines the kindergarten method is carried through several grades; and in addition to the primary work we have displayed beautiful patterns in inventional paper cutting, from the fourth and fifth grades.

In primary language-work much excellent material is shown; that from Marshalltown and from Hardin County being perhaps most prominent. Burlington sends primary work in all subjects, and from her entire system of schools. Folding slates, covered with primary work in various subjects, are shown from Charles City, Davenport, and Des Moines.

In Iowa, as elsewhere, drawing is rapidly coming into favor and finding a place for itself in schools of all grades. Clinton follows her kindergarten work immediately with drawing, and shows what can be done in a short time without a special teacher. Davenport, in a beautiful series, shows her entire course in the subject, from the fourth grade through the high school, and from nearly all the schools exhibiting we have samples of drawing evincing more or less perfect systems of instruction.

THE ORDINARY SCHOOL WORK.

But it is of general work, in the ordinary lines of study, that the great bulk of Iowa's exhibit consists. There are thousands of pages of pupils' work in arithmetic, grammar, geography, history, and the like. In such display Oskaloosa vies with Ottumwa, Marshalltown with Clinton and Davenport, and Rockford and Marble Rock with Shenandoah and Sidney. Every step of the pupil may be traced from the primary to the high school or through it. Burlington shows this whole educational history in a single volume, embellished by numerous ornate title-pages and drawings in ink. High schools in all the places named send work in mathematics, science, and language. There are beautiful pages of German, problems in algebra, botanical records and herbaria. Iowa Falls High School sends fine manuscript geometrical demonstrations, and Creston elaborate outlines of English grammar, together with a large amount of manuscript in subjects pertaining to the ordinary high school course. Nor is the higher education of the State without adequate representation. The State Normal at Cedar Falls makes a large display of drawings of all grades, of charts for primary instruction, and most beautiful map drawing in ink, large folio size. Then we have manuscripts of examinations in many subjects, physics, didactics, geometry, algebra, etc.; fine herbaria, prepared under the direction of Miss M. Gilchrist, the professor of natural science, and a set of large relief-maps in putty, prepared under the direction of Miss McGovern. These maps are something unique, at once simple, beautiful and instructive, and have deservedly received a great deal of attention.

The whole Normal School exhibit conveys the impression of an effort to furnish the State with teachers who shall be well informed and competent for work with the ordinary school machinery and apparatus or without it.

THE DEPARTMENT COLLECTION.

Close by the display just described will be found that made by the State Department of Public Instruction. This exhibit is a sort of epitome of the entire school system of the State. Here are school statistics spread on beautiful glass charts, displaying in concise and graphic manner all the facts which statistics are competent to show. For example, these tables show the growth of the Iowa school system from its organization to the present, the growth of the permanent school fund, of the expenditure for school purposes, the increase in the school population and in the number of teachers employed; they show the present organization of the various educational institutions under the patronage of the State; the organization and growth of the county normal institute system. A distinctive feature of this display is a large map of the State, showing the location of each school-house in every county. This map is a revelation to almost every one. Very few of all who have seen it had the remotest idea of how abundant school-houses in Iowa are, or of the uniformity of their distribution throughout the counties of the State; conditions which justify the motto, " A school-house on every hill-top."

THE EXHIBIT SHOWN BY THE STATE UNIVERSITY.

Associated with all these exhibits from the common schools, and in the centre of all in the general arrangement, the contributions from the State University find their place. The university shows a large display of drawings, both instrumental and free-hand, illustrating the work in this line for the freshman and sophomore classes. Then follow topographical maps of great perfection and excellence. In the very center of the exhibit stand two cases—the one containing a collection of fossils illustrating the method of teaching paleontology in the university, the other displaying two collections of land and fresh water shells—one belonging to the university, the other to Mr. B. Shimek, a former student. A score or more of note-books, neatly written and filled with original pencil-drawings, showing beautiful work done by students in the laboratories of natural science; and the theses in engineering, botany and zoology are, so far as we have been able to see, entirely without rivals.

It remains to speak of two special exhibits, one from the Iowa College for the Blind at Vinton, and one from the Institution for Deaf Mutes at Council Bluffs. Both these institutions send samples of pupils' work. From the blind are shown all kinds of fancy needle-work, bead-work, and knitted lace: from Council Bluffs come crayon sketches, boots and shoes, and a handsome walnut office desk.

Taken altogether, Iowa's educational exhibit is, as has been said, representative, comprehensive and complete, and once more, as at Madison, places the State in the foremost rank for educational privilege and endeavor.

THE COLLECTION SHOWN BY THE STATE NORMAL SCHOOL.

The following thoughtful suggestions as to the limitations and true significance of such educational exhibitions occur in the Biennial Report for the years 1883–'84 and 1884–'85—made to the Board of Directors of the Iowa State Normal School by the principal, Mr. J. C. Gilchrist. While these cautions are sound, yet the extracts just given from the report by Superintendent Akers show that the influence of such a display as was made at Madison may be good and far-reaching.

EDUCATIONAL EXHIBIT.

This normal school sent to the educational exhibit of the National Teachers' Association, held at Madison, Wis., August, 1884, a collection consisting of maps, relief forms of the continent, charts, drawings, herbaria, volumes of examination papers on the several objects taught, theses, etc., which received very favorable notice indeed. A similar, though better collection, was at the World's Exposition at New Orleans, and was deemed by good judges among the best in the great collection.

I wish to improve this opportunity to say that "Educational Exhibits" which are now so popular and which no doubt have considerable value, are misleading. Education cannot be put on exhibition. The mental and spiritual product cannot be materialized and set up for show. We see, in these collections, only the husks or shells; and the true educator, walking through the stalls and corridors lined on either hand with these physical and external forms, is painfully uncertain whether or not they contain any kernel, any real fruit with a vital germ—an inner educational life. Education in reality—the development of a pupil's mental and spiritual power, is beyond display at an exposition; it is technical scholarship only that can be sent to a fair. Then, too, this suspicion is not wanting, that the strong desire to appear to good advantage plays an important part in the preparation of these exhibits, and in many cases renders them unreliable. At the same time it must be said that such exhibitions are capable of doing good, by stirring up the public mind in regard to education, and in introducing a strong incentive to teachers and pupils to sustain themselves in the competition thus produced.

EXHIBITION OF ARTICLES MADE BY PUBLIC SCHOOL PUPILS IN JUNCTION CITY, KANSAS.

In the spring of 1883 an industrial exhibition of scholars' work was shown in Junction City, under the direction of Mr. Louis K. Webb, Superintendent of City Schools.

A little pamphlet catalogue* of the exhibition was issued, each alternate page containing an advertisement of a local merchant, so that the little book is in a double sense an evidence of the public spirit of the citizens—these advertisements paying the cost of the issue. The introductory statements by the Superintendent are quoted below. These general remarks in the pamphlet are followed by a few extracts from writers upon Manual Training, and by a Directory of the Public School Teachers of the city, which directly precedes the list of articles shown.

The articles shown and the name and age of each exhibitor are given, except in the case of the High School pupils, whose ages are not stated. Three hundred and seventy-eight articles made by the children were shown; besides these, sets of examination papers in each grade were shown, as well as the articles contributed by the pupils in that grade. The articles include a great variety. Many specimens of domestic industry were shown, comprising loaves of bread and cake, pies, rolls of butter, house plants, birds, with patchwork and all kinds of fancy needle and crochet work made by the girls; while the boys showed samples of printing, kites, a saw-mill, a miniature loom and carpet woven on it, bird house, garden vegetables, coops of live chickens and ducks, set of doll's furniture, collection of rock, croquet set, miniature set of tools, toy wagons and boats, picture frames, etc., one scholar often sending several articles. These collections are such as used to be shown at rural fairs and do not indicate any previous instruction in industrial training. Superintendent Webb's preliminary pages follow:

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*Education and Labor. The Public Schools and Manual Training, with a catalog of articles and exhibitors in the industrial exhibit given by pupils of the Public Schools of Junction City, Kansas, at the Opera House, May 25th and 26th, 1883, under the direction of Louis K. Webb, Superintendent of City Schools. Pp. 36.

THE PUBLIC SCHOOLS AND MANUAL TRAINING.

There is a very common feeling that manual labor carries with it, in some way, a lack of respectability; that it is almost a disgrace to be obliged to soil the hands with work. Many consider the successful speculator, who has contributed nothing to the nation's wealth, but only succeeded in securing a goodly portion for his own use, as more respectable than the man who, by productive toil, has enriched others as well as himself.

As a result of this sentiment, we find young men leaving the farm and workshop to enter a store or profession where they can wear good clothes every day, and consider themselves something more than laborers; while some young ladies, who would be greatly mortified if they could not play the piano, consider it no disgrace to be unable to make good bread or cook a dinner. This is not from lack of energy or a wish to avoid physical weariness, but from the natural desire to do that which will secure the highest public appreciation. As long as it is considered more respectable to be even a second-rate lawyer or doctor, or a merchant's clerk, than a skilled mechanic or successful farmer; to successfully defend, in a court of justice, a thief or murderer, than to plan and build a bridge that will always carry the train safely over, or a machine that will lighten labor and cheapen the necessities and comforts of life, so long will the professions be overcrowded, as at present, while skilful mechanics are scarce, and millions of dollars' worth of property and hundreds of lives are annually sacrificed for the want of well-trained civil engineers and builders. One of the greatest needs of the present day is men who unite trained minds and skilful hands.

UNFAIR CRITICISM OF PUBLIC SCHOOLS.

Many of the chronic critics of the American system of free schools, recognizing this defect in our social system, attempt to lay the responsibility upon the public schools, claiming that they educate the poor above their position in life, and tend to make labor despised. If this means that the influence of the schools is to stimulate pupils to endeavor to better their position in life by means of such labor as public sentiment regards as most honorable, and pays for most liberally, it is no discredit to either pupils or schools. But if it be true that the schools encourage contempt for labor, it is a serious fault which needs correction, for honest work of hand as well as brain lies at the very foundation of individual and national success. This disrespect for labor, however, is by no means peculiar to this country. It existed long before free schools, and therefore cannot fairly be attributed to their influence. It forms the basis of the class distinctions which are so marked throughout the countries of the old world. The democratic principles of our government tend to counteract this evil, but the degrading influence of slave labor and the ignorant condition of our foreign laborers have been strong forces in the opposite direction.

Though not responsible for this popular prejudice against labor, the schools have a duty in cultivating a healthful sentiment among pupils regarding its honorable position, and no subject is at present exciting more interest among the foremost educators of the land than that of industrial education and its relation to our school system. It is as yet a problem how much can be done in giving pupils practical training in the industrial arts in connection with the schools of even our largest cities. Certainly there seems to be no time for those of smaller places to do other work than that in which they are now engaged. Yet something can be accomplished in every school to correct false sentiment regarding labor, and to lead the children to avail themselves of home instruction to gain that manual dexterity which is the foundation of all skilled labor.

EXHIBITIONS OF INDUSTRIAL WORK BY PUPILS.

In several places in different parts of the country during the past few years there have been industrial exhibits of work done by pupils outside of school hours. In Iowa this matter has attracted sufficient attention to lead to the enactment of a law to encourage such exhibits. So far as I know, nothing of the kind has been attempted in this State, but it is an experiment easily tried, requiring little or no sacrifice of school time, and really helping teachers in their discipline and instruction by increasing their points of sympathy with their pupils.

For the purposes above indicated this Industrial Exhibit is given. It has taken no school time, except the small amount necessary to make announcements to pupils regarding it, and to awaken their interest in the matter. No premiums have been offered, nor other incentives used to lead pupils to participate in the exhibit, save the knowledge that their workmanship would be publicly displayed and their names published in the Catalog, except the remission to exhibitors of the small admission fee charged to pay the rent of the Opera House. Care has been taken that the pressure upon pupils to make articles should not be such as to interfere either with school work or home duties. It has not been required that articles exhibited should be made expressly for this occasion; the only condition being that they should be made wholly by the exhibitor, or in case of plants or animals exhibited, be raised or cared for wholly by him. Pupils have been especially encouraged to exhibit useful rather than merely ornamental articles.

THE EXHIBITION SUGGESTIVE.

The entries for this exhibit throw some light upon the question of the responsibility for the popular distaste for manual labor among young people of the present day. After making due allowance for the influence of the different degrees of interest in the subject manifested by different teachers, it is noticeable that pupils below the grammar grades are more easily interested than after they have reached the age of fourteen or fifteen. The eight years of school life, from six to fourteen, have created no distaste for labor, but two or three years of social influence at this age have worked a wondrous change. Children of working parents are most readily interested, but the tendency among them is to make something that will not correspond to the position in which their parents are placed. The daughter of a woman who barely supports her family by washing and cleaning is more likely to exhibit a piece of fancy-work than a loaf of bread or a well-ironed garment. Among this class there seems to be generally a strong home influence to lead the children to wish to seem above the necessity for remunerative labor.

If this pamphlet and the exhibit which calls it forth help to create a more healthful public sentiment upon this subject, and to make general the interest already existing among thoughtful people regarding the relation of our schools to manual training, it will have accomplished all that is hoped for it.

I desire to take this opportunity to express my thanks to the teachers who, by their co-operation in this matter, have done their part to make it a success; and also to the business men of this city, for their cordial encouragement of the enterprise, and their substantial aid through the patronage of the advertising pages of this Catalog, by which provision has been made for the expense of its publication.

Exhibitions of Scholars' Work in Moline, Illinois.

In the city of Moline, exhibitions of scholars' work, prepared in accordance with a definite plan, have been held for the past few years, commencing, it is believed, in 1883. Reference to the exhibition of 1885 is found in the Report of the United States Commissioner of Education for 1884–'85. I am indebted to the courtesy of Superintendent W. S. Mack for the following statement of the exhibition of 1886 and for the preliminary papers sent out to direct the preparation of the exhibition of 1887:

As will be readily seen, the exhibitions in Moline differ essentially from that of the Kansas town just described, in that prizes are offered, and the preparation of the children is under the supervision of the teachers and in accordance with the definite training given in the schools. The two exhibitions therefore represent two essentially different ideals,—the first, the voluntary home work of the pupils, the second, the work of the pupils as formulated on a definite plan and stimulated by the offer of prizes. These two phases are given so much in detail as affording opportunities for study and comparison.

The work shown by the pupils of the Moline schools is wholly optional, but if the scholar elects to exhibit any work, that work must be prepared in accordance with the rules and conditions prescribed by the superintendent. Therefore this exhibition takes on a more educational character than the less formal one in Kansas.

Superintendent Mack is a believer in the value of definite industrial training in the public schools, especially in such a manufacturing community as is that of Moline, and his exhibitions originate in a definite purpose to promote the adoption of a system of definite industrial training in the public schools under his superintendence.*

He says:

> The Exhibit of 1886 was the largest, and in every respect the most interesting one yet held. Especially is this true of those products comprised in Classes VIII, IX, and X (see scheme which follows), which were designed to show the possibilities comprehended in a general and systematic hand and eye training, given to entire classes and grades of pupils.
>
> Fifty-three cash prizes, amounting to $72, and two hundred and seven diplomas, besides those given with the cash prizes, were awarded for the best exhibits of articles. Among the articles for which prizes were awarded were the following:
>
> Model of plow.
> Model of wagon.
> Model of pitchfork.
> Model of portable forge.
> Model of sleigh.
> Model of ice-boat.

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* See Appendix M, paper VIII, for fuller statement of his views.

Model of panorama.
Model of bob-sled.
Model of step-ladder.
Office desk.
Bureau.
Wardrobe.
Parlor stand.
Bracket shelf.
Portable black-board and desk.
Table.
Wall-pocket.
Brooms.
Clothes-brush.
Knife box.
Easel.
Boot-jack.
Knife.
Bird-cage.
Tin pail.
Cane chair-seat.
Sled.
Toy chair.
Toy book.
Toy table.
Toy cross-bow.
Toy house.
Toy wheelbarrow.
Toy bob-sled.
Wooden puzzle.
Doll's dress.
Doll's undersuit.
Ruler.
Stockings.
Knit shawl.
Underwear.
Dress.
Rug.
Sheet.
Hammock.
Pin-cushion.
Carpeting.
Table scarf.
Embroidered skirt.
Embroidered handkerchief.
Pillow-sham.
Knit skirt.
Quilt.
Lambrequin.
Tidy.
Fascinator.
Hair wreath.
Worsted wreath.
Thermometer case.
Ornamental fan.

Not less than 850 articles were exhibited in Classes 1 to VII inclusive; 1,100 specimens of sewing, and 1,200 drawings and realized designs. The number of people who visited the Exhibit was 2,179—1,178 on the first, and 1,001 on the second day. Pupils who made articles for the Exhibit were admitted without charge.

We believe these exhibits have an educational value, and stimulate and develop a class of activities to which the ordinary school curriculum pays but meager attention. This year the list of products will include for the most part only those which may be produced in school under the supervision of the teacher, and only such as are proper and desirable results of that complementary training of hand, eye, and mind, which every rightly organized public school should give. Such an Exhibit could not, in our estimation, fail to be a greater educational force than the others, showing, as it would, what kind of training the school as an organization liberally supported by the people is capable of accomplishing. This hand-craft work is bound to supplement the present work of the school sooner or later. The rapid introduction of industrial drawing into the schools is a long stride in this direction, for the representation of form can not long be separated from the creation of form, nor can the school long afford to ignore the means of discipline offered by the creation of form out of the varied and appropriate materials lying so near at hand.

The following is a list of the premiums and classes arranged for the Exhibit of 1886. Each pupil was given a copy of this twelve weeks before the date of Exhibit. Five diplomas as prizes were offered to each class. The first and second prizes carried also a money payment of from $1 to $2, respectively.

CLASS I.—*Models of Machines, Implements, and other Mechanical Contrivances.*

1. Pupils over 12 years; 2. Pupils under 12 years.

CLASS II.—*Articles other than Models, the value of which shall depend upon their Utility.*

A. Articles of furniture. 1. Pupils over 12 years; 2. Pupils under 12 years.
B. Articles of clothing. 1. Pupils over 12 years; 2. Pupils under 12 years.
C. Miscellaneous useful articles. 1. Pupils over 12 years; 2. Pupils under 12 years.

CLASS III.—*Ornamental Articles whose chief value shall depend upon the Artistic Skill displayed in their Production.*

A. Lace and artistic needle work. 1. Pupils over 12 years; 2. Pupils under 12 years.
B. Scroll sawing. 1. Pupils over 12 years; 2. Pupils under 12 years.
C. Wood-carving. 1. Pupils over 12 years; 2. Pupils under 12 years.
D. Miscellaneous ornamental articles. 1. Pupils over 12 years; 2. Pupils under 12 years.

CLASS IV.—*Cabinet Work.*

A. Frame showing work in mitering. (All ages.)
B. Box showing work in dovetailing. (All ages.)

CLASS V.—*Toys.*

1. Pupils over 12 years; 2. Pupils under 12 years.

CLASS VI.—*Practical Cookery (Bread and Rolls).*

1. Pupils over 12 years; 2. Pupils under 12 years.

CLASS VII.—*Plain Hand Sewing (to be Exhibited in the Making of Dolls' Clothes). All ages.*

CLASS VIII.—*Drawings.*

A. Representation (object drawing).
B. Construction (working drawings).
C. Decoration (original designs in black and white for wall-paper, carpet, oil cloth, etc., the unit or units of design to be furnished pupils). Divisions and prizes same as in "A" under this class.
D. Free-hand outline copy.

CLASS IX.—*Objects showing the ability of pupils to "realize form" in connection with drawing.*

A. Realization of solid forms. Divisions and prizes same as in A, Class VIII.
B. Realization of designs. Divisions and prizes same as in A, Class VIII.

CLASS X.—*Specimens of hand sewing.*

A. Over and over and gathering. (One piece of unbleached muslin to be used for both kinds of work.) Second and third grades. Five diplomas.
B. Back-stitching and overcasting. (Woollen and cotton cloth.) Fourth and fifth grades. Five diplomas.
C. Patching and darning. Sixth and seventh grades. Five diplomas.
D. Button-holes (worked in linen and cotton cloth and in woollen with lining). Eighth grade and High School. Five diplomas.

RULES GOVERNING THE COMPETITION.

1. All pupils competing for the above prizes must be members of the school at the time of competition.
2. No pupil shall make more than one entry in any class, excepting Classes VIII, IX, and X.

3. All articles must be completed and entered on or before Monday, March 22.
4. All articles entered must be commenced and completed between December 18 and date of entry.
5. Any pupil to whom a first prize has been awarded at a previous exhibit shall not be allowed to compete with a product of the same kind.
6. Pupils shall be known by numbers during the exhibit.
7. No article will be accepted whose construction does not represent the pupil's own unaided effort. This rule shall not be construed to prevent pupils from obtaining all necessary advice and information before the actual commencement of work.)
8. Each pupil who hands in an article for the exhibit made out of school will be required to sign the following certificate:

"I hereby certify that this has been made by me since the announcement of the exhibit, December 18, and that no assistance has been given me since its commencement."

9. Most of the drawing must be done in school during drawing hours.
10. As early as the third week of the winter term pupils must decide what entries they intend to make and notify their teachers.
11. Teachers shall make every effort to insure a proper understanding of and compliance with these rules on the part of pupils.
12. Teachers shall take every precaution to prevent the interference of this work with the pupil's regular school duties.

FORM OF DIPLOMA.

MOLINE PUBLIC SCHOOLS.

Diploma awarded to George Hull for model of plough. Prepared for Industrial Exhibit, 1886.

Dated, Moline, Illinois, ——— —, 188-.

——— ———
——— ———
——— ———
——— ———

——— ———, *Supt.*

Committee.

The kind of hand work described and encouraged in our schools has grown out of an attempt to make drawing a necessary and permanent feature of school work, by showing a variety of results contingent on a knowledge of and training in form.

It occurred to me very soon after the introduction of drawing, seven years ago, that, inasmuch as drawing, in the minds of a large number of people, was associated with picture-making, it would be well to early dispossess them of this impression. The products which the different exhibits have called forth, and the steady and marked improvement from year to year, have satisfied the most skeptical of the educational and disciplinary value of drawing, until now, I dare say, so far as this community is concerned, it stands, as a means of training and expression, by the side of reading, language, and arithmetic.

Very respectfully,

W. S. MACK.

HOW THESE EXHIBITIONS ARE PREPARED.

In kindly forwarding the following schedule of the "Hand-Craft Exhibit," April 1 and 2, 1887," Superintendent Mack writes:

You will see, on examining this scheme, that drawing underlies all the different products called for. The Exhibit, then, will be composed of specimens of pure drawing, and specimens of such work as are conditioned on a knowledge of drawing.

Work like that named in this scheme may be done for the most part in school, and under the direction of the teacher. We have been doing it the greater part of this year, and we find that pupils like their drawing work better, now that they are familiar with many of the important uses to which it may be put.

Fourth Annual Hand-Craft Exhibit, Moline Public Schools, to be held in Y. M. C. A. Hall, April 1 *and* 2, 1887.

CLASSES AND PRIZES.

CLASS I.—*Drawing.*

A. Representation or object drawing. (Free-hand.) All grades. Two diplomas to each grade.
B. Construction or working drawings. (Instruments.) Grade six to High School. Two diplomas to each grade.
C. Decoration—designs in black and white. Grade four to High School. Two diplomas to each grade.
D. Free-hand outline copy. First three grades.

CLASS II.—*Stencil Work.*

Color effects obtained by using paper of different colors. Grade five to High School. Two diplomas to each grade.

CLASS III.—*Scroll-saw Work.*

Patterns for wood, iron, brass, etc., cut out of Manila board. Grade three to High School. Two diplomas to each grade.

CLASS IV.—*Cut-work Designs.*

Paper of different colors. Grades one to five. (Grades one and two, paper folding and weaving.) Two diplomas to each grade.

CLASS V.—*Outline Embroidery.*

Butcher's linen, crash, muslin, and oth r materials. All grades. (Grade one, kindergarten embroidery cards.) Two diplomas to each grade.

CLASS VI.—*Appliqué Work.*

Felt, etc., in different colors. Grade four to High School. Two diplomas to each grade.

CLASS VII.—*Construction.*

A. Wood joints, etc. (From plans.) Grade six to High School. Two diplomas to each grade.
B. Forms made of paper and other sheet material. (From patterns.) Same as "A" above.

CLASS VIII.—*Wood-Carving.*

Grade six to High School. Two diplomas to each grade.

CLASS IX.—*Specimens of Plain Hand Sewing.*

A. Running. (Unbleached muslin, 8 by 4 inches.) Grade two. Three diplomas.
B. Over and over. (Unbleached muslin, 8 by 4 inches.) Grade three. Three diplomas.
C. Hemming and gathering. (Lonsdale cambric, 12 by 2½ inches.) Grades four and five. Three diplomas.
D. Patching. (Woollen, 4 by 4 inches.) Grade six. Three diplomas.
E. Darning. (Woollen, 4 by 4 inches.) Grade seven. Three diplomas.
F. Button-holes. (Cotton and woollen, with lining, 4 by 4 inches.) Grade eight. Three diplomas.
G. Hem-stitching. (Lawn, 6 by 6 inches.) High School. Three diplomas.

CLASS X.

Drawings, models, collections, etc., illustrating subjects taught in school. (Map work is included in this class.) Grade six to High School. Three diplomas (to be awarded to rooms).

DIRECTIONS.

1. This Exhibit is designed to be, in the fullest sense, a School Exhibit; *i.e.*, an exhibit of such work as it is possible and desirable to do in school under the direction and guidance of the teacher. It comprises (*a*) specimens of drawing, showing the kind and variety of class work, given as a means of training pupils to appreciate and represent form, and (*b*) specimens of created or materialized form which have for their basis a knowledge of drawing.
2. The specimens handed in need not, as heretofore, be obtained as test work. They may be obtained under (the) such conditions as accompany the proper teaching of any subject.
3. It is not expected, excepting drawing, that every pupil in the grades designated will attempt to prepare a specimen of each kind of work. Some pupils may take one thing and some another.
4. Each girl is expected to prepare a specimen of plain hand-sewing.
5. All material will be furnished. Send to Principal or Superintendent for such material as is needed.
6. Begin work at once. Work should be completed ten days before close of term.
7. Try to get as many products for Class X as possible. Here is a wide field for effort.
8. As soon as specimens, or sets of specimens, are completed, send to Room 11, No. 2 School.
9. The time assigned to drawing, and one and one-half hours Friday afternoons, may be taken for this work. This is the *maximum time* to be taken during the period of the regular session.
10. All specimens are to be numbered, following plan of last year.

The details of school-rooms, etc., are here omitted. It will be observed that no *money* prizes are offered: whereas, on the previous occasion, the first two prizes carried a money payment.

EXHIBITION OF ARTICLES MADE BY PUBLIC SCHOOL PUPILS IN THE CITY OF NEW HAVEN, CONNECTICUT.

The following interesting account of a somewhat similar exhibition in an Eastern city is given by a writer in the New England Journal of Education. This article appeared in the issue of June 17, 1886.

As the readers of this Report well know, the educators of New Haven were among the very first to manifest interest in the introduction of Industrial Art Drawing in the public schools of the country, and the wide-awake teachers of that educational city have been among the earliest and most successful experimenters with the novel movement known as Manual Training. Whatever may be the verdict upon the showing of scholars' work here described, it is certain that it is the outcome of careful, well-planned, and faithful training in all grades of the public schools:

EXHIBITION IN THE NEW HAVEN, CONNECTICUT, PUBLIC SCHOOLS.

The Industrial Exhibition of the New Haven Public Schools is being held this week at the High School hall. One interested in natural methods of developing self-dependent character in the public schools can not fail to be interested in this contribution of ten thousand children now in school. To be appreciated fully it should be seen. A member of the city government remarked last evening, "It is as good as anything I saw at the Centennial; I shall come in here as often as I can."

There are five departments. First, written work mounted on charts. Specimens of business forms, letters, and reproduction stories, show excellent work in correct form of script, combined with ease of movement. There are about two hundred charts of this work. The next an exhibit of maps, geographical, shows a carefully graded scheme adopted by many of the schools, giving results that speak creditably for themselves. The next, an exhibit of mounted drawings, both free-hand and mechanical, attracts well-deserved admiration. The drawings are from the high and grammar grades. The kindergarten and busy-work department shows by its variety a great amount of individuality, and, by its beauty, a desire of the teachers that the innate love of the beautiful shall not be crushed out of the little ones, but rather developed, that it may put its impress upon character. The miscellaneous and ornamental work by children of all grades is the natural outgrowth of this love for the beautiful and unique, which the kindergarten cherishes. In this department are many thousand articles of rare beauty. *Repoussé* work, paintings on brass, cloth, and canvas, lace of numerous patterns, nearly every kind of embroidery-stitch known, Turkish mats, *macramé* tidies, with seemingly countless miscellanies, dazzle the eye and satisfy the æsthetic sense almost to surfeit.

DOES NOT INTERFERE WITH THE OTHER LESSONS.

This work has been performed without any apparent loss of mental work in the regular school curriculum, and not directly taught except as teachers have encouraged any individual aptness of a pupil. The plain sewing shows results that will probably determine its continuance. Taught once a week for the past eight weeks, it shows an exhibit of several thousand useful articles of every-day wear made entirely by the pupils. With hardly an exception the girls enjoy it very much. Those who do not soon become ashamed to lack interest, and join without compulsion.

The work in clay and plaster is that of classes working out of school hours during the past six months. Their general plan has been to model in clay, make a plaster mould of this model, then in this model cast a plaster bas-relief of the original model, correcting imperfections in both mould and completed cast. They show many very fine pieces of work. The wood-work department shows results of one hour per week during the past year. The boys were taught first to make simple joints, as the half and mitre joints. Then some simple article—perhaps a scouring-board—was made. Then more difficult joints, and other objects, applying them. When the list of practical joints had been completed, freedom was given for more individual choice of an object to construct. Drawings were made of the joints, some before and some after construction, as seemed advisable.

One school, commencing this spring, called for original working drawings, and required them corrected before the work was commenced. This school sent fifteen articles of entirely original designs. The wood exhibit contains book-cases, step-ladders, easels, stools of numerous patterns, library-steps, scouring-boards, many forms of joints, shoe-blacking cases, commodes, and numerous other specimens of handicraft, that would do credit to an expert in carpentry. An employer of twenty carpenters, while inspecting the joints, said, "Only a very few of my men could possibly make as good joints as these." Well, what is the use of it all? What does it show? These are legitimate and oft-asked questions during the week.

VALUE AND RESULTS OF THESE EXPERIMENTS.

The *use* of such work I believe is, to develop the faculties which make true manhood and womanhood. The *abuse* of any department by pushing it to exclude the others I believe must hinder development. The relative position of each is a question of the hour. Out of its discussion truth will eventually come. This exhibition shows two things: First, it shows the result of many thoughtful experiments in teaching things often considered to be entirely outside the influence of the schoolroom; secondly, it shows that the public school system of New Haven does not influence its mass of pupils to consider manual labor beneath them; that it does not instruct them in the love of the ancients with the intent that they shall forget the homely duties of their citizenship of to-day, upon which the prosperity of our country depends; nor the attractive arts of home decoration, which, if omitted, make the home in that respect to rank below that of the American savage.

G. B. HURD.

AN INTERESTING INDUSTRIAL EXHIBITION BY A MASSACHUSETTS SCHOOL.

The town of West Boylston, Worcester County, furnishes an interesting example of the way in which, under the guidance of a wise teacher, the industrial abilities of the scholars may be stimulated and developed, and at the same time may serve the literary needs of a school.

This rural town, of some three thousand inhabitants, supports a High School, with a four years' course, and both an English and Classical Department. The two courses are the same for the first two years, and vary during the last two only in the addition of the study of Greek. Latin is begun in the second year and continued through the course by all the pupils.

Pupils of both sexes receive a thorough English education, and, if they desire, are prepared for entrance into any college. The total number of pupils in 1886-'87 was 38.* Of these 26 were girls. The classical department numbered only 6. Of these 4 were girls. In this proportion of girl students of Greek may, perhaps, be traced the influence of the women's colleges in the State, "Smith," "Wellesly," and the "Harvard Annex." There are two teachers, John C. Worcester, A. M., Principal, and Miss Bessie A. Rice, Assistant.

The Principal, during the year 1886, being much interested in the subject of Industrial Training, and being also very desirous of securing for his pupils the opportunity both of consulting reference books and of forming some acquaintance with English Literature, considered how, in the absence of a public library and of any satisfactory school library, a collection of books for the use of the scholars might be acquired.

The plan of an exhibition of articles of pupils' work, done out of school, suggested itself and was undertaken with the most satisfactory results, as extracts from the catalogue and from the letter of Mr. Worcester, given below, demonstrate. The following paragraph introduces the list of articles which are given in the catalogue, with the names of the pupils exhibiting them:

INDUSTRIAL EXHIBITION, FEBRUARY 4, 1887.

During the years past the school has generally had a miscellaneous entertainment, but this year they decided to hold an Industrial Exhibition and Supper. Every article entered in the exhibition is made entirely by the scholar entering it. The supper is cooked and served by the scholars. It was thought advisable to place in the catalogue the list of all the articles entered by each scholar.

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* Catalogue of the West Boylston High School for the year 1886-'87, West Boylston, Massachusetts. "*Stude, disce, aut discede.*" Worcester: Oliver B. Wood, printer, 3 Maple Street. 1887. Pp. 20.

The list is a very interesting one by reason of its variety, each pupil showing several articles representing often very different kinds of work. It also brings out incidentally, in the articles composing the collections of natural objects shown, the characteristic educational conditions of a rural neighborhood, surrounded by fields and forests, as contrasted with those incident to the crowded streets of a large town or city. The inventive ingenuity attributed to the American is very clearly indicated in the mechanical contrivances and models shown by some of the boys.

It is curious to observe, too, how the usual division line between girls' and boys' work vanishes, just as it often does out in the actual work-a-day world—where men cook, wash, and sew, as deftly as women.

The articles shown, numbering 214 lots, include specimens of many kinds of needle-work, knitting and embroidery, of cooking and confectionery, some of the boys showing specimens of both the latter, while the girls, in like manner, showed picture-frames, baskets, etc. There were several "collections," of coins, of specimens of native woods growing in the town, of seeds, of antiquities (whatever that term may have comprised), of buttons, and of butterflies and bugs. As each "collection" had but a single number, it is clear that the exhibition was far more comprehensive than the total numbers would indicate.

The following paragraph in the catalogue precedes the list of books in the library, the procuring of which was the direct purpose of the exhibition:

LIBRARY.

> About a year ago the School Library was founded, although previous to that time there were about fifteen volumes owned by the school. In selecting books care has been taken to obtain such works as would best aid the pupils in the pursuit of their studies. By examining the catalogue of books it will be seen that the literature classes are better supplied with reference books, which help to make the study interesting as well as profitable, than any of the other classes. It is the intention to increase the number of books from year to year by school entertainments, etc. Any donation from friends of the school would be thankfully received. Volumes 69 to 78, inclusive, have recently been placed in the Library by the Literary, Musical, Social Circle.

Besides a World Atlas, Biographical Dictionary, and Chambers' Cyclopædia of English Literature, there are, among the number of well-chosen books, the ten volumes of Chambers' Encyclopædia and the thirty-three volumes of "Modern Classics."

By contrast with the former ephemeral school "exhibition," which was largely an end in itself, this showing of the result of the industrious use of the scholars' time outside of school hours, proves its superiority by the fact that it has not only given a practical direction to the efforts of the pupils while engaged in its preparation, as well as stimulated a healthy interest in the study of natural objects and in acquiring a knowledge of various industries, but has left a perpetual and growing influence for good, in this beginning of a collection of books for the use of successive generations of school children.

The letter of Mr. Worcester given below shows how this one effort has already resulted in favorable action by the town in increasing the facilities of the school. Thus it already appears that this home work of a few school children has had far more important and direct results than the most sanguine could have ventured to anticipate.

POTENTIAL INFLUENCE OF SCHOOL LIBRARIES.

The value and influence of a school library can hardly be estimated. In another town in Massachusetts, forty years ago, when its population was about the same as that of West Boylston now, there was a well-selected library of about a thousand volumes attached to the High School.

The value of that collection of books to the pupils of that day, when books were attainable with difficulty, could hardly be overestimated.

The history of that little school library can be given. It grew into a town free library, supported and added to annually by the town; a liberal citizen a few years since bequeathed $50,000. The town has grown to a city and the public library has kept pace with this growth. Another citizen has since left a large foundation for a free public library, conditioned on its acceptance by the town, which promises in time to result in the creation of one of the largest libraries of the country.

These two gifts, added to the city's annual appropriation to the Library, can hardly fail in connection with the woman's college—"Smith College,"—already established, and the Agricultural College, the endowment for which will soon be available, to make of this inland city a notable educational centre.

The willingness of this town to establish a town library, and the subsequent and consequent bequests to the increase of that Library, are unquestionably directly due to the influence of that school library which furnished to many in the succeeding generations of public school pupils their only access to books, and so implanted among the townspeople generally a taste for reading. In the light of this history of the influence and of the progress of a free school library in the town of Northampton, Massachusetts, it requires no very great stretch of imagination to believe it possible that, forty years hence, some one familiar with the history of West Boylston may point back to this exhibition of the industrial work of the High School pupils as the origin of their large public library.

The following extracts from the letter of the Principal show his immediate purpose in planning this exhibition, and give an interesting analysis of the articles shown :

WEST BOYLSTON, *November* 21, 1887.

DEAR SIR: I send you by this mail two copies of catalogues of the West Boylston High School, according to your request. In them you will find the list of articles which were entered for the Industrial Exhibition.

My object in holding the exhibition was to draw out the special talents of my scholars. Every article entered for the exhibition was made entirely by the scholar entering it. As you will see we had a collection department, and among them were five entries for the collection of different kinds of wood growing in our town. The pieces of wood were to be at least three inches in length with the bark left on one side, and all, as far as possible at least, should have their names attached. One boy found and collected 153 kinds of wood growing in this small town, and he succeeded in finding the names to 150 of that collection. Now that boy not only learned himself much that he did not know before concerning the different kinds of wood, but he also taught other people who viewed his collection much. Another boy built a large bird house with considerable fancy work about it, and another a dog kennel, while two others entered two tool chests with different apartments all complete. One boy struggled away for two or three months trying to make an electric engine, but seeing he was not going to succeed in season for the exhibition he made a checker and parcheese board, inlaying the squares. It was a very fine piece of work, and one that would do credit to a much older person. The needle-work department was well patronized, not only by the girls but also by the boys. That department consisted of fancy work, plain sewing, plain knitting, darning, and crocheting. In the art department we had some very fine drawings and designs, and a few paintings. The confectionery department was well filled, and with a great variety, which looked and tasted as well as the best confectioners' candies. The kitchen department was well filled with bread, pies and cakes—some of these were made by the boys, and a boy took the first prize on pies. In addition to the entries made in this department for prizes, a supper was served and every scholar contributed some of his own cooking for that supper, both boys and girls. Nothing was contributed to that supper but what was made by themselves. About 150 took supper, and all declared it first-class in every respect. I must not forget to mention the entries in the mechanical department by three girls. Two of them entered baskets, one of them a strong bushel basket and the other a half bushel, and another girl made a table for this department. Their prizes which they received were simply ribbons. In the collection department were four collections of seeds, and if I remember correctly 227 was the largest number, all different. The boy who entered for a collection of buttons had 1,887 all different and sewed on to a piece of cloth. I might speak of many other things, but have not the time. All the printing was done by two boys who had a hand press. We charged an admission fee of 15 cents, and held the exhibition one afternoon and evening, and after all expenses were paid we had $93. About $50 we put into books for the school library, and we used $40 to fit up a room for the library, which is a room 10 by 12 feet, and now it is carpeted, drapery curtains for the windows and book-cases, black walnut table, and chairs. The scholars enjoy the room very much and also their books. We now have 142 books in the library. As an outcome of the exhibition the town voted to build an addition to our High School building, giving us a new recitation-room and a laboratory, and giving to us the old recitation-room for our library. I am a firm believer in industrial education. It will give us better workmen in the future.

Such exhibitions will draw out certain latent talents which otherwise might never be brought to light. All this *can be done* and not interfere with the regular school work. Another advantage is derived, that many an evening might be spent on the street corners, or in the stores, by boys if they had not this kind of work to interest them and keep them in their homes. * * *

Yours, respectfully,

JOHN C. WORCESTER,
Principal of High School, West Boylston, Mass.

To Col. I. EDWARDS CLARKE,
U. S. Bureau of Education.

EXHIBITION OF SCHOLARS' WORK IN THE CITY OF SALEM, MASSACHUSETTS.

The following brief notice of the showing of the work of the pupils of a single school is from the Annual Report of the School Committee of the city of Salem for 1886.

By inference it would seem that the work shown was in the direct line of the lessons in wood working of the Manual Training Schools:

> The second industrial exhibition of the pupils of the Bowditch School took place in Lincoln Hall at the close of the school term; and, while there was not such a large and varied display as in the year preceding, yet the articles contributed were highly creditable to the scholars.
>
> These exhibitions are in the right direction, and should be encouraged by the committee; and if extended to all the schools could not fail of beneficial results.
>
> The judges were so well pleased that they made a very liberal contribution towards providing a full set of carpenters' tools, which have been purchased, the use of which is allowed to the pupils as a reward for good standing in study and deportment.

LIMITATIONS OF THESE EXHIBITIONS.

These accounts of the several exhibitions of the articles made by school children seemed worthy of insertion here as records of a passing phase of educational activity; so far as they may have served to arouse the interest of the community in the schools themselves, and so far as a study of the exhibitions may serve to throw light upon the problem of how best to adapt the common school courses to the needs and best interests of the children, they will not have been held or recorded in vain. Beyond these uses, however, they are comparatively worthless. Regarded merely as ends, they give no more promise of usefulness or durability than Jonah's gourd, which sprung up and withered in a night. Still, they are capable of conveying most valuable lessons, and wherever they can be used to show to the community the methods and educational utility of thorough courses in industrial education, arranged in an orderly, progressive series through all grades of the public schools, they can be made to serve a definite and desirable purpose. The instance of the exhibition by the West Boylston High School is suggestive as to the further uses which such united efforts of the pupils may serve.

TWO NOTABLE EXHIBITIONS.

An unforeseen delay in the issue of this volume enables me to add to these accounts those of two extensive exhibitions of scholars' work, shown during the spring of 1888, by the school authorities of the two large cities of Philadelphia and Washington.

These last comprehensive exhibitions furnished to the citizens of the two cities an opportunity to study the methods and the extent of their system of public schools, as well as to note the special features of industrial training.

This was especially true of the Philadelphia Exhibition, as in that were included views of all the school buildings, a showing of the extent and stores of the supply department of the Board of Education and statements of the school statistics.

THE PHILADELPHIA EXHIBITION OF SCHOOL WORK IN 1888.

In Chapter XIV of this present volume will be found beginning at page 165, a somewhat extended account of the progress of the movement for introducing industrial training in the schools of Philadelphia, begun when Mr. MacAlister was called, in 1883, to the superintendency.

In the spring of 1888 it was decided that a general exhibition of scholars' work should be held, in order to show the public what had been actually accomplished by these efforts to put elementary industrial training in the schools.

METHODICAL PREPARATION.

The extent of this exhibition, as proposed, and the thoroughness of organization which secured the remarkable success of the undertaking, can be readily understood by a perusal of the circular given below, which was sent to the teachers of all the schools, setting forth fully what was proposed and giving clear and explicit directions for the preparation of the work to be shown. I am indebted for copies of these circulars to the courtesy of Superintendent MacAlister. There was also a special circular to grammar school teachers. This is omitted, as well as that portion of the circular on "general arrangements," since they relate only to details of preparation and the order in which schools were to visit the exhibition.

PURPOSE OF THIS PHILADELPHIA EXHIBITION.

It will be seen that the exhibition was designed to be an exhaustive setting forth of the work of the schools, and also a showing of the whole school system of that great city. In addition, there were special features of interest. As was fitting in Philadelphia, this was designed on the "Centennial Ideal." It somewhat resembles in scope and plan the great exhibition held in New York during the spring of 1885, under the auspices of the Industrial Education Association, though, as it was confined to a single city, it was susceptible of a more strictly logical arrangement.

The New York Exhibition, elsewhere described in connection with the account of the Industrial Education Association of that city, was made up of collections sent from many schools and institutions, private as well as public, and from various communities. This, which we are now to consider, was a showing of the work of the school system of a single large city.

The following is the preparatory circular referred to:

PHILADELPHIA PUBLIC SCHOOLS.

EXHIBITION OF INDUSTRIAL WORK.

May 9, 10, 11, 12, 1888.

BOARD OF PUBLIC EDUCATION,
Superintendent's Office, March 3, 1888.

To the principals of the public schools:

The Board of Public Education has authorized an exhibition of all kinds of art, manual, and industrial work, done in the public schools, to take place at Horticultural Hall, during the month of May, the Public Education Association of this city having generously provided the funds to defray the expenses of the same.

The exhibition will consist of all kinds of school work that can be represented graphically or objectively, viz: Manual training, industrial art work, sewing, Kindergarten work, drawing, map drawing, penmanship, clay modelling, and manual work of every kind produced in the schools. It is intended to make the exhibition as complete as the means and time at command will permit without interfering with the regular school work.

The following outline of the plan, and directions for carrying it into operation, are for your information and guidance:

The exhibition will include the following particulars:

I. Pupils' work.
II. Drawings and photographic views of the school buildings.
III. An exhibit of the supply department of the Board of Public Education.
IV. An historical exhibit.
V. Statistical statement of the educational system of the city.
VI. An exhibition of school work representing the practical operation of the following departments:
(1) Manual training school.
(2) Industrial art school.
(3) Sewing classes.
(4) Kindergartens.
(5) Cooking classes.
VII. An exhibit showing the relation of the public schools to the other educational institutions of the city in which public school scholarships are held.

I. The pupils' work will form the most important part of the exhibit. It is intended to be a full and fair exhibit of the regular work of the schools performed since September last. The exhibit will include the work done in all the grades of the primary, secondary, and grammar schools, as many classes of the central high, girls' normal, and manual training schools as can be provided for, the industrial art school, and the kindergartens as follows:

(1) *Primary schools.*— Drawing, penmanship, clay modelling (geometric forms, etc.), and manual work of any kind done in the schools.

(2) *Secondary schools.*— Drawing, map drawing, penmanship, clay modelling (relief maps, etc.), sewing, and manual work of other kinds.

(3) *Grammar schools.*— Drawing (constructive, representative, decorative), map drawing, penmanship, sewing, clay modelling (relief maps, etc.).

(4) *Kindergartens.*— All the gifts and occupations employed in the children's work.

(5) *Industrial Art School.*— Model and objective drawing, decorative design, clay modelling, wood-carving.

(6) *Manual Training School.*— Free-hand, mechanical, architectural, decorative and map drawing, modelling in clay (decorative, architectural, relief maps), wood work (carpentry, joinery, turning, pattern making, modelling, carving), iron work (vise work, smith work, tempering), moulding, brazing, mechanical construction, electricity and its appliances.

(7) *Girls' Normal School.*— Drawing (constructive, representative, decorative), sewing.

(8) *Central High School.*— Drawing (constructive, representative, decorative, mechanical), map drawing.

II. The department of property and buildings will exhibit photographs and drawings of the elevations and ground plans of school buildings recently erected, and drawings or photographs of two or three of the oldest public school buildings still standing in the city.

III. The supply department: A representative exhibit of the supplies of every kind furnished to the public schools.

IV. Historical exhibit: Two school-rooms are to be fitted up to represent the arrangements and conveniences for public school education furnished by the city to-day and a half century ago, as follows:

(1) A school-room containing a complete outfit of the newest and finest furniture at present in use, black-boards, maps, charts, pictures, globes, text-books, stationery, and appliances of every kind furnished by the Board of Public Education for the use of pupils and teachers.

(2) A school-room restored as far as possible from the oldest furniture in the city, and intended to represent the furnishing and outfit of a school-room as far back as the material obtainable can be secured for this purpose.

V. Statistical statements.

(1) A large statistical chart, showing the actual condition of the schools at the present day.

(2) A large statistical chart, showing the growth of the school system from its origin by periods.

(3) A chart showing the classification of the pupils in the various departments and grades of the public school system.

(4) A map of the city, showing the location and distribution of the school-houses of all kinds.

VI. An exhibition showing the practical operation of the following departments of the school system:

(1) *Manual Training School.*—Classes engaged in wood work and iron work.

(2) *Industrial Art School.*—Classes engaged in drawing, clay modelling, and wood-carving.

(3) *Sewing.*—A sewing class, under the instruction of a sewing teacher.

(4) *Kindergartens.*—A kindergarten class pursuing the occupations and games, under the direction of a kindergartner.

(5) *Cooking classes.*—A cooking class from the Girls' Normal School, under the direction of the instructor in cooking.

The classes in these several departments will be furnished by relays of pupils from the various departments of the school system which are represented. Stated times will be fixed for the exhibition of work done by these classes.

VII. An exhibit showing the relation of the public school system to other educational institutions of the city in which public school scholarships are held.

(1) Drawings executed by pupils holding public school scholarships in the School of Design for Women.

(2) Work done by pupils holding public school scholarships in the Pennsylvania School of Industrial Art.

(3) Work done by pupils holding public school scholarships in the Towne Scientific School, University of Pennsylvania.

RULES TO BE OBSERVED BY PRINCIPALS IN PREPARING EXHIBITS.

1. All the work exhibited must have been done since September 1, 1887.

2. The drawings must be upon the white drawing paper supplied by the Board of Public Education.

3. The map drawing must be executed upon the white paper furnished by the board and *must be entirely free hand.*

Maps representing the natural productions of the various grand divisions, and the United States may be executed upon the tracing maps supplied by the Board of Public Education, which may be colored at the option of the teacher.

Large wall maps representing special geographical features may be executed at the option of the teacher.

4. Clay modelling may include geometric solids, relief maps, and any other work of this kind done in the schools.

Small relief maps (on panels not exceeding 14 by 10 inches) must be the work of individual pupils. Large relief maps, executed by a number of pupils, may be sent for exhibition.

5. Sewing exhibits should contain work of every kind done in the sewing classes. In selecting the exhibit, it should be made to represent the largest range of work possible.

6. The work of every kind exhibited must be the *exclusive work of the pupils*, and no exhibit will be received unless the principal sending it shall certify to this fact.

7. It is important that the exhibit of each section should represent all the kinds of manual work done in the schools. It will be desirable, therefore, to have a local committee for the purpose of making a proper selection for the exhibit to be sent.

8. Principals of all schools intending to send an exhibit will notify the Superintendent of Public Schools to that effect on or before the 1st day of May.

Further information as to details will be furnished from time to time as occasion may require.

By order of the special committee on exhibition of industrial work.

JAMES MACALISTER,
Superintendent Public Schools.

SPECIAL COMMITTEE ON EXHIBITION OF INDUSTRIAL WORK.

ANDREW M. SPANGLER, Chairman.

SIMON GRATZ.
JAS. S. WHITNEY.
PAUL KAVANAGH.
ISAAC A. SHEPPARD.
ANNA HALLOWELL.
THOS. E. MERCHANT.

THE EXHIBITION A GREAT SUCCESS.

The exhibition which was thus outlined proved completely successful, both halls of the Horticultural Building were filled, and there were over eighty thousand visitors. It is thought to have been the largest showing of such industrial work of pupils ever made in this country.

A competent student of the exhibition writes that it was a clear exposition of the wonderful advance made during the past few years in the graphic and manual work done in the public schools of the city. The exhibition of the sewing done was very striking. The work of the special schools of "Industrial Art" and "Manual Training" attracted great interest, especially the exhibition made by the Manual Training School. Classes in manual training, industrial art work, sewing, and the kindergarten were in operation in the hall day and evening, and furnished a practical illustration of the methods of this class of school work. These object lessons on a large scale proved very attractive.

WIDE REACHING INFLUENCE OF THIS EXHIBITION.

This exhibition, besides exciting the liveliest interest among the citizens, attracted many educators from other States.

The worth can hardly be exaggerated of such practical demonstrations of results and methods in the opportunities they afford to educators for study and comparison; while, for the community, they are of the greatest practical utility in showing the citizens much of the actual working of the schools with a completeness not otherwise attainable.

EXHIBITION MADE BY THE PUBLIC SCHOOLS OF WASHINGTON, D. C.

In the preceding pages (see Chapter XII of this volume) a brief account is given of the progress of the experiment in introducing some forms of industrial training in the public schools of Washington, in addition to the industrial art drawing which had been taught for a number of years. The plans for affording a large increase in the facilities for making industrial training general throughout the schools, as proposed by Commissioner Webb and Superintendent W. B. Powell, for the school year 1887–'88, were also given. The satisfactory result of the year's experience in this attempt to introduce the new studies in all the schools was made known to the public by the exhibition which was opened May 31, 1888, in which was set forth a showing both of the work of the scholars and of the methods of instruction given in all grades of the schools.

This was a very remarkable and clear exposition of how the education of the children in the public schools of Washington is carried on.

PLAN AND ARRANGEMENT OF THE WASHINGTON EXHIBITION.

The exhibition was arranged in a very large one-story building known as the former Skating Rink, on E Street, near Seventh Street northwest. The interior of the large hall was very handsomely decorated with the National colors and with flags depending from the roof beams. All around the building the work of the schools, grouped by grades, was arranged on a common plan, so that the arrangement of the exhibition was, in itself, a very important example of the educational value of a logical scheme, thoroughly carried out. It was possible by spending a few hours in examining and studying this showing of the schools, to get a better comprehension of their methods and results than could have been obtained by many visits to the different schools of all the grades. The programme furnished to visitors, which is appended here, shows the plan of the exhibition. All the schools, some four hundred in number, were represented, and the work of all the scholars in the four primary grades.

A SHOWING OF VOLUNTARY WORK BY THE PUPILS.

In addition to the required work there was a great deal of spontaneous, voluntary work, shown in separate booths, placed at intervals about the hall. All of this voluntary work was of interest as showing the tendency of the scholars. One example, a portrait medallion, in high relief, the head of an Indian chief, modelled by a boy of eleven years of age, was very striking as an evidence of unusual artistic power. It is in the opportunities thus afforded by this general teaching of industrial art drawing in schools, and of this industrial work, to learn of the existence in some pupils of exceptional art capacity, that forms one of the important incidental advantages of the study. When the value of art, and the great advantage to a country of possessing great artists is more commonly understood, these indications of the possession of exceptional art capacity will be carefully observed and opportunity afforded for the development of such powers.

In this instance, the boy is the son of a remarkable expert in modelling, and not only inherits his father's talent, but has had the advantages of familiarity with that class of work from childhood. The schools of Washington have had absolutely nothing to do with enabling *him* to do *this work.* Industrial Art Drawing, Object Teaching, Modelling in Clay, and the latest fad, "Construction Work," might all be well taught to a thousand intelligent pupils of his age and not a single one of them could begin to equal this model shown by him ; therefore, to show this artistic work in such a way, or in such connection, as to justify the inference that this was a legitimate result of the school training is simply to mislead. Of course, no such intention existed, but the great danger of thus misleading careless visitors forms a serious objection to mingling the two classes of work in such an exhibition.

The average excellence that is attained in drawing, modelling, or construction, under good teaching, is in itself very remarkable and fully justifies the introduction of these studies in all schools, and I have repeatedly called attention to the advantages they offer for the discovery of extraordinary art capacity; but no training can give *that*—it is God-given.

It should, however, be kept in mind that in such exhibitions of voluntary or "spontaneous" work when shown, as in this instance, in connection with the direct work of the pupils which *is* the result of these required studies of the school, there is great danger that the public will be wholly confused and will be led to suppose that, in some way, the production of these spontaneous exceptional articles was, also, the direct result of the school training; than which nothing could be more untrue or unfair.

No amount of school training would have enabled the ordinary pupil to have executed that artistic head of an Indian just mentioned, and if the ability *to do that* is to be taken as an index of what the school instruction can do, or of what the average pupil ought to be able to do after receiving such instruction, it will be disastrous.

ONE USE TO BE MADE OF "SPONTANEOUS" WORK.

There is, incidentally, a possible value in such spontaneous art work by pupils, which might well justify the occasional suggestion to the scholars, by the teacher, that they undertake such work; in the opportunity thus afforded of ascertaining the comprehension by the pupil of the principles underlying the subject taught, and of seeing the applications made, when the scholar was left to his own resources unbiased by text-book or teacher. It might reveal unsuspected errors in the apprehension of ideas,—certainly, in spoken or written language, young children continually receive impressions wholly foreign to the intention of the speaker or writer; and it seems not improbable that in their comprehension of the language of drawing they may fall into similar errors, which could, in this way, be seen and corrected by the teacher.

CONSTRUCTION WORK IN CONNECTION WITH DRAWING.

A noticeable feature of the drawing instruction in the Washington schools, as plentifully shown in this exhibition, is the construction by the pupils from working drawings of paper models of the objects from which they make their free-hand drawings. This method is taught in the latest edition of the Prang Educational Drawing books where the patterns of the construction drawings are given. In the higher grades, these objects were not only admirably constructed, but in some instances ornamented with excellent taste.

The pupil first makes a working drawing of the object to be made, then, by the pattern of this drawing cuts out the object from paper and constructs it, and then makes a drawing from it, and afterwards ornaments the object by drawing on it some appropriate design. Superintendent Powell follows similar methods in the study of English. The pupil describes an object after first seeing and comprehending the object. So, in the very earliest study of form, the pupil models the form in clay, and thus learns all about it by making it; after that, it is comparatively easy to describe it, either in the language of the drawing or by using the written representations of speech.

SUGGESTIONS AS TO LIMITATIONS IN USE OF SUCH OBJECT LESSONS.

The Kindergarten methods of giving to the very young children the definite idea of forms by letting them handle and become perfectly familar with objects; and of training the eye to discrimination of colors, is, undoubtedly, a wise following out of the indications of nature which, in the process of drawing out the intelligence of the infant, deals first with sense-perceptions and secondly with language.

So with pupils in the lower primary grades of the public schools, progressive development may perhaps be more rapidly and surely advanced by the use of similar means, but the doubt arises whether there is not danger that these means may be too exclusively relied on and too long continued; whether all these objects are not crutches for the intellect,— excellent make-shifts and aids at certain stages of development, but at a later period rather hindrances than helps.

Admitting all the undoubted value of these objects and contrivances, as shown here in illustrating the study of geography, for example, for making clear and definite the pupil's ideas of places, and of the configuration of continents; yet there are qualities more valuable at some stages of mental growth than even the acquisition by the pupil of the most accurate scientific precision in the knowledge of these material facts.

The power of continued abstract thought, which certainly was developed by the old methods, possibly at the expense of much else, is most essential, if virile mental powers and characteristics are to be retained.

The development of the powers of the imagination are certainly desirable, and, probably, the "Arabian Nights Entertainments" and the Fairy Lore and Mythologies of all nations, if given to the child at the right period of his opening mental faculties, are of more value in the cultivation and growth of this divine faculty of the human being than are object lessons and manipulation of models.

The wisdom of the continuance of much "object teaching" in the higher grades may perhaps be questioned; while, after the ideas of the form of the cube, sphere, cone, etc., have once been fully acquired by modelling them in clay and the cutting and pasting of paper models, which is done in the lower grades, it would seem almost a waste for pupils in the higher grades to take a part of the very brief time allotted to drawing for making over and over again these paper models. As models for free-hand drawing they are of value, but a series of them in numbers sufficient for the use of succeeding classes might be kept, so that those pupils could have that time reserved for further instruction and practice in drawing itself.

CONSTRUCTION WORK IN PAPER MODELS.

In this matter of the making by pupils of these paper models, an interesting question of precedence has arisen so far as the schools of Washington are concerned.

As will be seen in the account which follows of the exhibition of similar work by the pupils of the colored schools of Washington, the question of the first introduction of this making of paper models by the pupils in drawing in the schools of Washington is incidentally raised.

As elsewhere stated, this plan of having the pupils make their own models may very probably have originated with different teachers, in different localities. The need of such models in free-hand drawing soon appears, and the difficulty of raising the money to purchase them may well have stimulated the inventive faculties of teachers elsewhere to have "home-made" models executed by the pupils, just as it led Mr. Hunster to conceive and adopt this expedient in his colored schools. The recent introduction in drawing books of directions for drawing and making these models, as a part of the regular "construction work," is somewhat significant.

I am informed by Mrs. Fuller, now for some years the director of drawing in the white schools of Washington, that in 1881 or 1882 the paper models for drawing were first made in the High School in connection with the study of projection, the development of surfaces, etc. It was taken up by the "special classes" only.

In 1884 the need of models for each pupil in free-hand drawing led to its general introduction in the regular classes of the High School. In 1885 it was suggested to the teachers in the eighth grade, and was adopted by many of them. In 1886–'87 they were adopted in the fifth grade, and during the school year 1887–'88 they have been made in all the grades above the fifth.

This evidence, given without any knowledge of his claim, incidentally confirms the claim of Mr. Hunster, director of drawing in the colored schools, that he was the first to have these paper models made by the pupils in the Washington schools, as it can be incontestably proved that his models preceded those made in the white High School by several years.

The thorough drilling in the fundamental principles of drawing, the grounding of the pupil in that elementary work which is at the basis of all sure and successful after progress, was the essential idea which Walter Smith inculcated.

The real object and value of industrial art drawing in public schools is to give such elementary knowledge and skill as will enable the child to go on in later years. This may not enable the school to produce work so attractive or impressive to the general visiting public, but in the early years of the introduction in the Washington schools of the drawing as taught by Walter Smith in the Massachusetts State Normal Art School, work was produced by the pupils which sustained the scrutiny and secured the commendation of professional experts in engineering, in architecture, and in the fine arts.

The industrial features now so popular are very attractive, and it has been shown that a certain proportion of this industrial work is practicable.

AN UNSETTLED QUESTION.

For the pupils in grades lower than the "High" and "Manual Training" schools, and higher than the Kindergarten and lowest primary, there is still a question as to whether the most of the time available from the definite literary studies, the three R's as they are familiarly called, can be better spent than in thorough courses of drawing. But this is the mooted question now being considered by thoughtful educators, and one great value of such exhibitions is for comparison and suggestions arising from the opportunities afforded for study and comparison of methods.

The showing of the methods of teaching geography was very interesting. This study is illustrated by "Object Charts" of the products of the country, by views, engravings, and photographs of places, and by the modelling by the pupil of raised maps in clay, also by boxes of sand in which plans of cities, streets, etc., can be easily shown. The effect is to give the pupil a more vivid and realistic idea of a city, or town, than is conveyed by seeing a mere black dot on a map, and a clearer conception of a country, than it is possible to acquire by merely studying the flat printed maps of the Atlas. A collection of apparatus, made by former and present pupils and used for illustrating physics, was also shown.

THE HIGHER INDUSTRIAL WORK.

The work sent from the sewing schools and the articles made in the Manual Training School Shops, both in wood and iron, were shown in the centre of the building; while in a space reserved there was a School of Cookery in full operation; the excellence of this instruction was practically tested each day by a number of invited guests who were deftly served by these "neat-handed Phyllises" of the Normal and High Schools. The teachers had been taught in the practical Training School for Teachers of Cookery founded by Mrs. Anna L. Woodbury some years since, as one of the schools of the "National Industrial Association" established in Washington in 1883.

THE OPENING CEREMONIES.

This notable exhibition was opened on Thursday, May 31, 1888, by Mr. William B. Webb, President of the Board of Commissioners of the District of Columbia, who gave a concise statement of the history of the introduction of these novel methods of industrial training in the schools within the past two years. Short addresses were made by ex-Judge MacArthur, author of a work on "Industrial Education," and by one or two of the School Trustees.

President John Eaton, of Marietta College, Ohio, ex-United States Commissioner of Education, was present and examined the exhibition with great interest.

The exhibition was to be open three days, but such was the interest shown, and so large was the attendance, that it was kept open two additional days. The number of separate articles shown, in addito the written exercises in English composition, of which there were eighteen thousand,—one from every child in the schools,—amounted to many thousands,—twenty-five to thirty thousand at least.

USES OF SUCH AN EXHIBITION.

As affording an unrivalled opportunity for the study, by the citizens, of the methods of instruction in the schools of Washington, this exhibition was a remarkable success.

The exhibition of the higher Industrial branches of the work done in the Manual Training Schools and Schools of Cookery, and the specimens of sewing, made a clear showing of what can be accomplished in the way of giving in the public schools thorough elementary training in these practical industries. The showing of the Manual Training School work, greatly extended in its facilities during the year in accordance with the plan, as stated in Chapter XII, was very satisfactory; especially in its evidence of the progress of the pupils from the first to the last lessons — recalling the writing master's exhibit of the pupils' penmanship "before and after" *his* course of lessons!

Several teachers of the public schools and of the special training schools, were present to explain the exhibitions made by their pupils. Their clear explanations left nothing to be desired. Superintendent Powell went through the exhibition exhaustively, with Col. N. H. R. Dawson, United States Commissioner of Education, and some of the gentlemen of the Bureau of Education, and gave a very lucid explanation of the instruction in each grade of the public schools, and of that of the special schools of Industrial Training; ending with a practical demonstration of the success attained by the instruction given in cooking.

The industrial tendency of the education of to-day was most strongly marked by the contrast between this exhibition, with its great variety of new departments, and the former exhibitions of the work in Industrial Art Drawing. The attention in this exhibition was so distracted by this multiplying of objects and of methods, that it was not easy to compare the present status of the drawings shown with those of the earlier exhibitions. The impression of excellence in drawing alone, was not so strong now as formerly; but, on the other hand, the ingenuity shown in the practical application of the knowledge and facility acquired in the study and practice of drawing was very striking. As drawing is the only sure foundation upon which all these other studies rest, it may be pretty safe to infer that if weakness in drawing, arising from giving too much attention to the new studies, appears, it will be speedily corrected; because success in those studies depends absolutely upon a thorough knowledge of drawing.

It is one of the essential and ever-present problems of the educator to preserve a just proportion between the various subjects and methods which continually clamor for a place in the schools.

The following guide to the exhibition shows both the order of its arrangement, which was most admirable, and also incidentally sheds light upon the methods which now prevail in the schools of Washington.

The writer is once more greatly indebted to Superintendent Powell for courtesies shown in connection with this exhibition.

The following is the programme referred to:*

TO THE VISITOR.

The plan of this exhibit and the purpose of the training and education here set forth will be best seen and understood by examining the work in the order in which it is herein catalogued and described.

Normal School.

The exhibit represents the constructive work of the pupils in all the grades of schools, including the High School and the Normal School.

All pupils from the first grade through the High School and the Normal School have eye and hand training in making, in representing, and in ornamenting form. This work is known in the schools, respectively, as drawing, shop work, sewing, cooking, and laboratory work.

Résumé.

Number of pupils in sewing schools (girls from fourth, fifth, and sixth grades).	1,900
Number of pupils in schools of cookery (girls from seventh and eighth grades and High School)	471
Number of pupils in schools of carpentry (boys from seventh and eighth grades and High School)	660
Number of pupils in school of turning, moulding, and forging (boys from High School)	112
Grand total	3,143

On entering, at the right is seen the Normal School exhibit, representing means, processes, and results. Here is represented the material used by the normal class in teaching composition, reading, number, geography, plants, animals, and form, in the first four grades of school. Representative work of the pupils of the practice schools (first four grades) in form, in composition, and in number is on exhibition here. The Normal School exhibit in form represents the work in this study through the eight grades.

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* Industrial Exhibit of the Public Schools (first six divisions) of Washington, D. C., on May 31, June 1 and 2, 1888. Pp. 7.

CONSTRUCTION AND DRAWING.

PRIMARY AND GRAMMAR SCHOOLS.

Following the Normal School exhibit is the representation of the form study and drawing from every school. Every pupil of the first, second, third, and fourth grades of school is represented. At least fifteen pupils from each school of the fifth, sixth, seventh, and eighth grades are represented.

The development of this work through the grades will be seen by following the order of the arrangement around the room, beginning with the first grade.

The vertical order of arrangement illustrates the course of study in each school, as follows:

I. Construction of form.
II. Representation of form.
III. Decoration of form.

In the first four grades construction is shown by forms moulded in clay, the placement of sticks and folded papers.

Representation is shown by drawings of single forms or of groups of forms constructed by the children.

Decoration is shown by drawings of ornament. These are designed by the pupil.

The unit of design is derived from a natural form in the hand of the pupil, such as a leaf, a flower, a branch, or a plant. The law of arrangement is given by the teacher, as repetition around a centre, bilateral, or continuous as in a border, or for covering a surface.

Decoration has also been applied to the models constructed, as seen in the work of the fifth, sixth, seventh, and eighth grades.

HIGH SCHOOL.

From the regular classes there is an exhibit of one page from each drawing book;

From the first year, geometrical work, object drawing, and design;

From the second year, the same, with light and shade work in object drawing;

From the third year, projection, development, and perspective of solids. The work of the third year is wholly mechanical.

Special Classes.

First year: Free-hand object drawing, design drawing, and geometrical problems.

Second year: Shaded drawings from casts and models, designs modelled in clay, geometrical work (projection and perspective).

Third year: Work in color.

First section: Historical ornament, flowers and applied design.

Second section: Drawings from casts.

Third section: Light and shade in projection and perspective.

COMPOSITION.

On the tables just in front of the drawing, arranged in line around the hall, may be seen the constructive work in English, illustrating the teaching of composition in the schools. This work is begun in the first grade and is carried through the eight grades, the High School and the Normal School. Every pupil in grades below the High School is represented.

The High School is here represented by the written work of pupils in the several years of the course, including note books, class-room exercises, and formal historical and rhetorical essays.

MANUAL TRAINING.

North of the Normal School exhibit is that of the Manual Training Schools, representing the work done in the wood-working shops by the pupils of the seventh and eighth grades (grammar schools) and of the High School; also work done in the wood-and-metal-working shops of the High School, and draughting.

There are 500 pupils of the grammar schools receiving instruction in manual training, and 272 pupils of the High School.

HIGH SCHOOL.

The following departments of the school are represented, as described below:

Department of Natural Science.

Botany.— In this branch of the department are exhibited specimens of plants or of parts of plants, papers of description and of observation in botanical subjects, drawings and charts illustrative of laboratory work, and note books containing notes on lectures and the description of plants.

Physiology, Physical Geography, and Geology.— This exhibit consists of charts, illustrating portions of the work and of note books containing notes on lectures.

Zoölogy.—This study is represented by cases of specimens of insects, drawings illustrating the minuter animal life of the District of Columbia and papers on zoölogical subjects.

Physical Department.

Here may be seen the apparatus used in teaching the laws of physics and in illustrating and explaining many natural phenomena, and also drawings representing much of the apparatus.

Chemical Department.

This department is represented by a collection of chemicals, by materials used by the pupils in the practical work, by apparatus used in laboratory work, and by an outline of lectures by the teacher.

The attention of the visitor is next invited to the

SCHOOLS OF COOKERY.

Lessons in cooking will be given by the teachers of cookery, as follows:
Thursday afternoon, at 3.30 o'clock, by Miss E. S. Jacobs.
Friday morning, at 10 o'clock, by Miss E. S. Jacobs.
Friday afternoon, at 2 o'clock, by Miss E. S. Jacobs.
Saturday morning, at 10 o'clock, by Miss H. E. Sloat.
Saturday afternoon, at 2 o'clock, by Miss H. E. Sloat.

SEWING.

West of the kitchen, the sewing done in the schools is exhibited by grades. This branch was but recently introduced, the pupils having had but four months' instruction. One thousand nine hundred girls of the fourth, fifth, and sixth grades are now receiving instruction in sewing.

GEOGRAPHY.

South of the work in sewing is an exhibit intended to represent (imperfectly) the manner of teaching geography pursued in the schools.

THE INDUSTRIAL EXHIBITION OF THE WASHINGTON COLORED SCHOOLS.

A fortnight after the opening of the industrial exhibition of the work done in the white schools of Washington, which has just been described, a similar showing by the pupils in the colored schools of the city was opened June 15, 1888, in the Miner School Building, a large building on Seventeenth Street northwest, near Q Street, occupied by the colored high and some graded schools. The teachers in the colored schools of Washington are all colored.

GENERAL PLAN OF EXHIBITION.

In its arrangement and general features this exhibition closely resembled that held at the Rink in E Street, only, as the several departments were here shown in different school-rooms, there was a better opportunity for studying each. In the large assembly hall, however, there was an effective grouping of the several grades of schools, from primary to high. Here only the literary work and the drawing and construction work were shown. The English compositions, the book-keeping, and the work in Latin and in German were most creditable in every respect. The clay modelling shown was excellent, and was superior to that shown at the Rink. In drawing there were two or three examples of work in enlarging small pictures which were very noticeable, while the average excellence of the general showing of drawing and of model construction work, was quite equal to the display made by the white pupils in E Street. A most interesting feature of this exhibition was the session held each afternoon from 4 to 7, during which pupils from each grade of the schools were busily engaged in drawing, construction work, and in clay modelling. In this way not only were the methods of instruction shown, but the work of the pupils done in the presence of the spectators could be compared with similar work exhibited; thus demonstrating the fact that the works shown were a part of the regular, every day work of the children. This feature proved very attractive.

EARLY EXPERIMENTS IN CONSTRUCTION WORK.

Reference to the work of Mr. Thomas W. Hunster—who, first appointed in 1875, is still in charge of the drawing in all the colored schools of the city—will be found on pages 332–335 of Part I of this Report. It was quite interesting, in connection with the "construction work"—of which so much is now said, and to which, as seen at the exhibition of the white schools, reference has just been made,—to be shown similar models in paper, made in the same way from "construction drawings" and used for free-hand object drawing, which Mr. Hunster had invented for himself, and used in his classes, as long ago as 1877. So far as he is aware they were his original invention, for he had never seen or heard of any like them. Being forced to do with very little means, he invented this way of getting models for his classes. A set of good sized cog-wheels in paper still work perfectly, from which admirable free-hand drawings were made. These, as well as the preliminary construction drawings, still adorn the walls of the large room devoted to the drawing classes, and give evidence of the ingenuity and practical facility of this teacher. A large collection of these old drawing models still forms part of the working material of the drawing department. This innovation not being favored by the school trustees, and the scholars being required to do the same work as was done in the white schools, which did not then include this feature, this construction work was omitted for several years, till it was begun in a small way in the white schools a year ago, and so has been reintroduced in the colored schools. It is very probable that other teachers elsewhere, incited thereto by like need for models for free-hand drawing, may have invented similar devices to these of Mr. Hunster.

A large exhibition of work in sewing was shown in two of the large school-rooms.

THE WORK SHOWN BY THE MANUAL TRAINING DEPARTMENT.

Another large school-room was filled with the work of the manual training classes; one the work of the High School boys, and the other representing that done by boys sent from different schools to the manual training teacher. The facilities have been increased during the past year and two teachers employed regularly; as a consequence this work shows a great advance over that done the first year. One of the teachers came from Howard University, where he gave similar instruction. Some of the work in wood was quite as good as similar work done by the white pupils under the direction of the trained graduates of the Worcester County Free Institute.

The work was not quite so closely confined to instruction work as was that seen at the exhibition of the white schools, a number of dolls' bureaus and bedsteads being shown, as well as a model of a bridge, the joint work of several pupils, made from working drawings and built to scale, however, and, so far, educational; also, a model of winding stairs, etc. These models were very well executed and, like picture making on the black-board by drawing pupils, are doubtless more attractive to visitors and probably of more interest to the pupils than mere educational work done to secure accuracy; yet it is questionable if the time given to making these models could not be better devoted to this purpose of securing accuracy and perfection in constructive details, or in making larger objects for use. Some tables, book-cases, boot-blacking cases, etc., were shown, which were very good in design and in execution. These were each designed by the pupil who made them. While some of this wood-work in joints, dovetailing, etc., was accurate, many pieces showed just that want of accuracy which it is the main purpose of this training to overcome.

In another large school-room a cooking school, which attracted a large number of on-lookers, was in full operation, in charge of two of the Normal School scholars who have been trained in Mrs. Woodbury's school before mentioned.

THE NORMAL SCHOOL EXHIBITION.

In an adjoining room was arranged an admirable exhibition of the Normal School; this, largely a showing of methods, was extremely interesting. This school, under the competent direction of Miss Moten and her assistants, one of whom, Miss Wilder, was, like herself, a graduate of the State Normal School at Salem, Mass., made quite as good a showing in the quality of the pupils' work as was made at the Rink by the white Normal School. The clay modelling, done by the pupils under the general supervision of Mr. Hunster, was especially noticeable.

The capacity of these colored children at least, to receive a similar education to that given to white children of like age would hardly be seriously questioned by any fair-minded observer after a visit to this exhibition, and an opportunity of meeting Professor Cardoza, of the High School, and his accomplished corps of teachers. The teacher of classics, Mr. Terrill, is, by the way, a graduate of Harvard. This impression would be further confirmed by the opportunity given of meeting Miss Moten, the principal of the Normal School, and her assistants; of conversing with Mr. Hunster, the faithful, enthusiastic, ingenious and capable head of the drawing department of the colored schools of Washington; and of being shown the work of the scholars in each department of the schools and having the methods of instruction so intelligently explained.

Here, certainly, is a great instrument of civilization, and the mimetic capacities of the colored race render them exceedingly teachable. What a contrast between these educational opportunities given to the colored children of Washington in 1888 and those of less than thirty years ago, just before the advent of Lincoln and liberty.

THE EVOLUTION OF THE COLORED RACE IN AMERICA.

The step from the conditions of their original African barbarian ancestors to the present development of these children of American freedmen is a long one, and one the study of which, of interest to all students of ethnology, must be of surpassing interest to those who hope for the progress of all mankind. How much of this evolution is to be attributed to the result of the two centuries of training and association of these native Africans and their children with their white masters under the hard conditions of Slavery, and how much is solely due to the inspiring influence of Freedom during the past quarter of a century, is a problem in equity; for the relative proportions of credit due to each it were not easy justly to apportion. It may not be denied, however, that the average slave of 1860 was, in all that makes the civilization of a race possible, far in advance of his savage kin in Africa. If in nothing else he was advantaged, he had, in the acquisition of English as his native language, gained a priceless possession, a master-key to all knowledge.

This may be said, without any discussion of the wrongs of slavery, grievous enough, that, in consideration of the indiscriminate abuse heaped upon the whites as slaveholders (who, by the way, are entitled to the benefit of the fact that for the most part, so far as recent generations are concerned, they were hereditary slaveholders just as the blacks were hereditary slaves, neither having had any part in bringing about the conditions into which both were born), this immense though incidental advantage to their quondam slaves may, perhaps, be reckoned as a substantial gain to the black man from this enforced relation, and as one of those compensations allotted by Providence to all conditions, the existence of which, to the philosophic student of history, go far to "justify the ways of God to man."

EDUCATIONAL NEEDS OF THE COLORED RACE.

In view of what these colored school children of Washington have done and are doing, as proofs of the kind of education the children of that race are capable of receiving, it may be well for all to remember that the education of these people, who are now estimated to number some seven millions of the population of the United States, is an ever-pressing problem. The African-American is apparently just as persistent an occupant of the country as the Caucasian, has been here as long, is as thoroughly acclimated, and as contented to stay. Endowed by the Constitution with equal civil rights, his education and development can not be a matter of indifference to any thoughtful citizens. Industrial education seems at present especially adapted to the development of the race.

WORTH OF INDUSTRIAL TRAINING TO THE WHOLE COUNTRY.

The records of the school exhibitions of pupils' work, which have been given in this chapter, illustrate how widely extended throughout the United States is the present movement for some definite industrial training of children in the public schools.

Since this training is thought to be so desirable for all white children it surely can be no less so for the colored children.

However unfriendly some may still be to the system of American free public schools, even these objectors would find it difficult to seriously protest against this proposal to remedy some of the gravest faults charged against the influence of the public schools.

The stock indictment against the free common schools has been that children whose lives were to be passed in work, were taught just enough of book knowledge to dissatisfy them with all forms of manual industry; while they were given no useful practical knowledge of work. Now that it is proposed to change all this, and to give the children some knowledge of industries, both theoretically and practically; to add to their elementary English studies this definite industrial training, it will be interesting to observe what new objections these opponents of free schools will raise; for, with most of these carping critics, it is not so much the methods of these schools as the schools themselves to which they are opposed.

It is beyond dispute that, if it is desirable to teach all the children in this Republic how to work and to interest them in their work, there can be no instrumentality devised to effect this wholesale result comparable to the system of free public schools which is ready at hand.

INDUSTRIAL TRAINING EQUALLY DESIRABLE IN EVERY SECTION OF THE COUNTRY AND BY ALL CLASSES OF CITIZENS.

It is evident that the industrial training of girls and boys, so far as may be found practicable in the public schools, is as desirable throughout the Southern States as it is in the Northern and Western States. What a blessed increase there would be in the comfort, health, and happiness of the great American people if all the school girls, white and colored, could be so taught in the cooking classes as to be able to prepare palatable and healthful meals in place of the dyspepsia-breeding messes that are still so prevalent all over the country, and if simple lessons in economy of purchasing all household supplies and in wise use of material could be given in the schools.

With all the boys of one generation so trained as to be handy with tools, and all the girls taught the best way to perform the ordinary household duties, and it is confidently claimed by the advocates of the new methods that the possibility of doing all this in schools has been abundantly demonstrated, the average comfort of living would be amazingly increased throughout the whole country, and the wealth of the country sensibly augmented; for the wastefulness that is bred of ignorance and incapacity is responsible for a large part of the poverty and squalor existing in the world.

CHAPTER XVII.

THE NEW INDUSTRIAL EDUCATION ASSOCIATIONS AND THEIR RELATIONS TO PUBLIC SCHOOLS.

Introductory—A new departure in the methods of associative effort—Educational experiments in Boston, New York, Hoboken, Baltimore, and Washington—How movements are initiated by Americans—The inter-relation often existing between voluntary associations of private citizens and the public authorities—The Industrial Education Association of New York City, organized in 1884—This society a striking instance of evolution—Account of its origin, which dates back to that of the founding of the Wilson Mission Industrial School for Girls in 1854—The Wilson Mission—The coming of Miss Emily Huntington as teacher—Her happy thought of adapting Kindergarten methods to the elementary training of little girls in household duties—The Kitchen Garden Association, founded in 1880—The purpose of this new society—The Constitution and By-Laws—Abstracts of Annual Reports for 1881–'82,–'83—The "Farm Garden" methods as developed by Mrs. Briant—Reference to a letter from Charles G. Leland, Esq.—Reference to a suggestion made by President Runkle, of the Massachusetts Institute of Technology—The worth of Educational Ideals—Kitchen Garden hand-books—The rapid growth of the society—Annual report, March, 1884—List of officers for 1883–'84—The Kitchen Garden Association disbands March 21, 1884, and the members immediately organize as The Industrial Education Association of New York City—Abstract of First Annual Report of the new Association, April, 1885—Details of organization—Far-reaching plans—Different departments of work—The great object of the new society as definitely announced, "To promote the introduction of industrial training in schools"—By-laws of the Industrial Education Association—Treasurer's report for first year—List of Officers, Board of Managers, and Committees—Second Annual Report, April, 1886—Valuable appendices to this report—Evidences of rapid growth and efficient work—Statements concerning the Exhibition of Children's Industrial Work held in New York City under the auspices of the Association—The movement in New Jersey—The New York Association secures offices at No. 21 University Place—Copy of certificate of incorporation—Changes in by-laws—Treasurer reports large increase in expenditures and larger growth of income—List of Officers, etc., for 1886–'87—Catalogue of the Children's Industrial Exhibition, held from March 31 to April 6, 1886—Extracts from catalogue, descriptive of four representative exhibits—Prefatory statement by the "Committee on Management of the Exhibition"—Report of this exhibition by "Committee on Industries"—Third Annual Report, April, 1887—Removal of the headquarters of the Association and of its schools and collections to No. 9 University Place—The growth of the library, the museum, and the classes, making more room necessary—Immense increase in number of pupils taught—The work develops in many directions and with great rapidity—The Treasurer's account showing that the total receipts for the year have been more than one hundred times as large as were the average annual expenses of the Kitchen Garden Association—Prospectus of the proposed College for the Training of Teachers—Later statement of the work of the society, made November 1, 1887, by Dr. Nicholas Murray Butler, the President, in an address before the meet ing called to organize a similar association in Baltimore — Fourth Annual Report, May 4, 1888—The Training College for Teachers—Contemporary movements to promote Industrial Education—Important courses of free public lectures, given twice a week, from October to June—List of lectures—Publications announced by the Association—"The Boys' Club"—The various instrumentalities which are directly traceable to the founding of the Wilson Mission Industrial School for Girls in 1854—The relation of these various movements, initiated by private benevolent enterprise, to the public schools—The Industrial Education Association of New Jersey—A direct outcome of the New York experiment—This movement in New Jersey was begun by the late General George B. McClellan—Notice of this movement in Report of State School Superintendent Chapman—Association organized June 19, 1885—Abstract of First Annual Report—Report extends to April, 1887—Account of exhibition of industrial work of children opened in Hoboken, April 15, 1886—An interesting meeting, participated in by the Governor and other authorities of the State and by leading educators—List of Officers for 1886-'87—The Industrial Education Association of Baltimore—Preliminary meetings referred to in previous chapter—The society fully organized and committees appointed December 8, 1887—Initial movements of the new Association—List of Officers—The National Industrial Association of Washington, established April 3, 1883—An outcome of the First Mission School of Cookery, founded by Mrs. Anna L. Woodbury, in 1880—Account of the Association—Public Meeting held in Washington, April 3, 1888—Addresses by Hon. Arthur MacArthur, Col. I. Edwards Clarke, and Prof. W. F. Mitchell—Reports and papers by Mrs. Woodbury, of Washington, Miss Laws, of Cincinnati, Mrs. Dietrick, of Covington, and Professor Mitchell of Howard University—Report of the Mission School of Cookery, read by Professor Warder—Account of meeting and extracts from Addresses and Reports—Plans of the Association—List of Officers—The North Bennet Street Industrial School, Boston—Abstracts from reports showing work of this school from 1881 to 1887—Interesting statement of industrial training given to classes sent from the public schools—Variety of operations carried on by managers of this school, both for the instruction and amusement of the pupils—Details of methods and of expenses—List of Officers—Cooking taught in public schools—Account of Boston "Kitchen Schools," under the patronage of Mrs. Hemenway—Report on, written by Miss Homans, of Boston, and read by Dr. Grady, President, before the Industrial Education Association of Baltimore—The Industrial School for Girls, Milwaukee, Wisconsin.

INTRODUCTORY.

Although these first chapters are given to matters relating especially to the public schools, it seems advisable, before proceeding to the account of the public Manual Training Schools which, within a few years, have been established in several cities, to give here a brief history of some notable educational undertakings, which, already, more or less closely related to the public schools, are, by means of their independent experiments, accomplishing most important educational work, that can hardly fail of exerting a marked influence upon their several local communities, and may well result in modifying the methods of instruction in the public schools of the people, if, indeed, they do not in some essential particulars revolutionize past ideals as to the kind of training best adapted to develop the capacities of the majority of the children attending the free common schools.

As accounts have already been given of the several exhibitions of articles made by scholars in public schools in various towns and cities, an account of the great exhibition of the work of school children, held in New York City, "under the auspices of the Industrial Education Association," during the spring of 1886,—which, in addition to the work shown by many private and industrial schools in the city and vicinity, included collections of articles made by the pupils of the public schools in several towns and cities, of different States,—will be included in this account of the work of this society.

The widely-known experiments in practical methods of industrial instruction which have also been successfully carried on under the direction of this society, full of suggestion as they are as to the methods which may be successfully adopted in the public schools for the training of the younger pupils, have led to the insertion here of the account both of this society and of the one more recently established in New Jersey, modelled after the parent New York association.

The history of a similar Association in Baltimore, begun in a previous chapter (see pages 180–186 of this volume), is also here continued.

The account of the National Industrial Association, in the city of Washington, District of Columbia, the organization of which preceded that of the Industrial Education Association of New York City, follows.

It is of interest to see how this National Association, with its wide scope and far-reaching plans and influence, was the result of the opening of a modest Mission School of Cookery by Mrs. Woodbury.

In the extracts given from the papers prepared by Mrs. Woodbury, Miss Laws, of Cincinnati, Mrs. Dietrick, of Covington, and Professor Mitchell, of Howard University, read before the public meeting held by the Association in April, 1888, will be found an account of the growth and usefulness of this school, in the training of the teachers who, during the past year, have had the charge of the cooking classes of the public schools of Washington; as well as interesting glimpses of the efforts that have been made and the results attained in the promotion of industrial training in some cities of the West. It is of interest, too, to see how groups of benevolent and industrial undertakings have, in several instances, grown out of the simplest efforts made by a few earnest women for the amelioration of the social conditions incident to the crowding of city populations.

The description of the successful experiments in Industrial Education in Howard University, given by Prof. W. F. Mitchell, is an interesting account of the working and growth of the Industrial Department, founded some five years ago, in that college. It is valuable as a record of practical efforts to teach definite industries to the colored students, and in so far partakes of the nature of a trade school and differs in its methods from the mere pedagogic disciplinary training of the typical Manual Training Schools. The differences pointed out by Professor Mitchell between the Manual Labor Schools of half a century ago and the Industrial Schools of to-day are worthy of attention.

The methods followed in the instruction in Howard University as described by him are full of suggestion as to how the practical problems of teaching self-supporting industries to the colored people may be attacked. It will be noted that Professor Mitchell keeps in view immediate practical results. This very practical turn is, indeed, characteristic of all the efforts recorded in the remainder of this chapter.

Accounts of the North Bennet Street School, a successful industrial school in the city of Boston, to which classes are sent from some of the public schools, and of the Boston Cooking Classes, founded by Mrs. Hemenway, also attended by public school pupils, are here grouped. An account of a continuous experience during ten years of the successful industrial training of children of both sexes in an industrial school for girls in Milwaukee, written by Mrs. Cobb, the Superintendent of the school, is also inserted here; both because it illustrates the value of the kitchen-garden methods invented by Miss Huntington and for the explicitness with which the methods adopted are described.

Although this institution is a home as well as school, the fact, that the pupils are of all ages, from three to eighteen years, and that they pass through a continuous progressive course, beginning with the youngest children. renders the experience here acquired valuable for its suggestions as to what forms of industrial training may be advantageously taught in the public schools in the grades between those of the Kindergarten and the Manual Training School.

Thus it appears that in New York City; in Hoboken; in Boston; in Baltimore; in Washington; in Covington; in Cincinnati; and in Milwaukee, the interest on the part of the public in this modern phase of education is shown in a very practical and efficient way.

In these American communities there is no supine reliance upon governmental action. The initiative, in educational as well as other matters, is constantly taken by private citizens; an informal coming together for concerted action, followed by a slight organization, to be succeeded by a legally-incorporated society if the purpose of the experiment sufficiently commends itself, is the usual history of such movements. Sometimes, when the purpose is sufficiently comprehensive and the experiments prove successful, the movement commends itself to the public authorities and is by them adopted; in such instances the pioneer society disbands, or, as it may happen, devotes itself to other phases of the subject. So, consequently, as has been before noted in this Report, individual efforts result in action by the community through its authorized officials.

The reports of the educational officials of Boston, now for some years, have borne witness to the value of the educational experiments initiated by Mrs. Hemenway, and by the directors of the North Bennet Street Industrial School; while the latest action of the New York City School Board is in accord with the plans and purposes of the two associations with which, in turn, Miss Dodge, now a member of the New York City Board of Education, has been for some years identified.

It is because of such frequent inter-relation between the efforts of private citizens and the ultimate action of public educational authorities, that I have thought proper to place here, in connection with the history of this movement towards the general introduction of some forms of industrial education in the public schools, accounts of some of the most notable of the recent independent efforts of citizen associations, founded to promote the movement.

The histories of the origin, and of the several steps taken in the development of these pioneer and representative societies, are here given in detail, so that those contemplating similar undertakings in other communities may have the opportunity of studying intelligently these experiments which have proved so successful; may be informed as to the purposes which inspire and the theories which underlie these movements, and may also be able to communicate with the managers of these several undertakings for such further information as may be desirable; since it is not always possible to give here those minute practical details in regard to the methods of teaching the new occupations which are essential to success in initiating the new experiments, and which must be sought both in personal communication with the teachers, and in the hand books, and other material, issued by these various associations.

THE INDUSTRIAL EDUCATION ASSOCIATION OF NEW YORK CITY.

This society, which was organized in 1884, and regularly incorporated in 1886, as The Industrial Education Association, furnishes a striking illustration of practical evolution and of the rapidity with which in the United States a vital educational idea may be developed and disseminated.

Before giving an account of the present society it seems proper to recite the steps which led to its formation.

THE WILSON MISSION.

The Wilson Mission,* with an industrial school for girls, founded and supported by a few charitable Christian women, was established in the east side of New York, near Avenue "A," as long ago as 1854. To this school, some twenty or more years later, came a young lady from Connecticut, interested in the practical work of teaching the poor girl children of that crowded quarter of the great city. It seemed a very retiring and self-sacrificing position, one little likely to bring any general recognition, and yet it was not many years before the efforts and name of this New England girl were known, not only throughout this country but in many foreign lands; and from this small beginning there has spread an ever-growing influence, inspiring direct, practical educational efforts for the industrial training of children.

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*The Wilson Industrial School for Girls, No. 125, Saint Mark's Place, New York City.

MISS HUNTINGTON DEVISES THE "KITCHEN GARDEN."

Observing the neglected condition of the swarming children, and the absence of any possible opportunity for their domestic training, the bright idea suggested itself of adopting the methods of the kindergarten, which had proved so successful in the training of very young children, to convey practical instruction in all domestic duties. Developing this idea into a complete system of progressive training lessons, by means of songs and employments in the use of all kinds of diminutive copies of the implements and utensils used in housekeeping, Miss Emily Huntington began her classes "in 1877," as is recorded in the Annual Report of the United States Commissioner of Education for 1878, where is given a succinct statement of her methods. Six Lesson courses of "Occupations," comprising the several kinds of work essential to good house-keeping, were arranged, each course requiring a month's instruction. To these programmes of employments the name of "Kitchen Garden" was given as like to, yet distinctive from, "Kindergarten."

THE KITCHEN GARDEN ASSOCIATION.

In 1880 a number of ladies in New York City, who had become warmly interested in this work initiated by Miss Huntington, formed themselves into a society, under the above name, for the purpose of promoting and extending the adoption of the methods devised by Miss Huntington.*

From the report of Miss Grace H. Dodge, the corresponding secretary of the new Association, read at its first meeting, the following account of the development of this "happy thought" is taken:

There are at present eleven places where the Kitchen Garden is being taught in this city. The Wilson Industrial School for Girls, 125 St. Mark's Place, is where the system originated in 1876. At first it was taught slowly, lesson by lesson, as ideas were developed, by Miss Huntington. In 1877, thirty-five young ladies volunteering to teach, there were classes morning and afternoon, and nearly two hundred children weekly were taught. In 1878 there were only morning classes, and a proportionate number of children taught. In 1879 a class of twenty-four children came daily an hour and a half, a different lesson being taught every day, as in kindergarten, having its moulding, pricking, and dish-washing days, etc. This last experiment proving decidedly the best, the same plan has been carried out this year. Many of the children taught in 1876 and 1877 are in places, and bring constant reports of commendation from employers, and many have expressed thanks on behalf of their parents.

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* Arrangements were early made with the well-known educational publishers J. W. Schermerhorn & Co., now of No. 7 East Fourteenth Street, New York, for supplying the material—furniture, dishes, and implements in sizes suitable for the use of children—needed for this novel instruction. The hand books prepared by Miss Huntington were also published by this firm.

Detailed accounts of the several classes follow. Classes are reported in Spuyten Duyvil, Hoboken, Brooklyn, Boston, Philadelphia, and Chicago, while in Providence, in Troy, and in Belfast, Ireland, classes of ladies who have been instructed in the new system are also reported. Starting simultaneously from so many centres, it is not strange that a knowledge of the new methods was rapidly diffused. The following statement of the organization of the new society and the list of officers is taken from the first official publication:*

THE KITCHEN GARDEN ASSOCIATION.

In January of 1880 a number of ladies interested in the Kitchen Garden system united in the formation of the Kitchen Garden Association, the object of which is: 1. To secure the wide and correct diffusion of the principles upon which the system is based. 2. To prevent its degenerating into a careless and erratic method of teaching. 3. To promote uniformity of action in all Kitchen Garden schools. 4. To establish a place of reference and for consultation with those interested in the system. 5. To assure its perpetuation.

Subsequently the Association elected its officers and board of managers, drew up its constitution and by-laws, and was duly incorporated April 2, 1880, under the "Act for the incorporation of benevolent, charitable, scientific, and missionary purposes."

Miss Huntington (the originator of the system) has established and will continue normal classes for the training of ladies who wish to teach children in Kitchen Garden. These Normal Classes begin Wednesday, November 3, 10.30 A. M., and lessons once a month are given for the following six months, at 125 St. Mark's Place.

Miss Huntington has trained her associate, Miss Torrey, who will go to other cities; she alone is authorized to teach normal classes.

OFFICERS OF THE KITCHEN GARDEN ASSOCIATION (1880–'81).

President, Mrs. Sam P. Blagden; Vice-President, Mrs. John Sinclair; Secretary and Treasurer, Miss Elizabeth M. Thomson; Corresponding Secretary, Miss Grace H. Dodge.

Board of Managers.—Miss Gould, Mrs. Charles Ide, Miss Sands, Miss Wetmore, Miss C. T. Lawrence, Miss Marbury, Miss E. H. Evarts, Miss Mary Agnew, Miss E. M. Smith, Miss Crosby, Miss Van Santvoord, Miss Whitfield, Miss Brown, Mrs. H. O. Havemeyer, Miss Emily Huntington.

Advisory Committee.—Mrs. Jonathan Sturges, Mrs. Augustus Hemenway.

Committee on Nominations.—Miss Thomson, Miss Marbury, Miss Van Santvoord.

Committee on Occupation Materials.—Miss Wetmore, Miss Lawrence, Mrs. John Sinclair.

Committee on Printing.—Miss Sands, Miss Brown, Mrs. Ide, Miss Whitfield, Miss Dodge.

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* The Kitchen Garden Association, May 1, 1880. Pp. 12.

Copies of the constitution, by-laws, and of the certificate of organization are given; these follow the usual forms. The only unusual provision occurs in the first clause of Article VIII of the constitution, which relates to the Board of Managers, and provides that "the Board of Managers shall consist of the Officers of the Association, fifteen members, who shall be elected annually, and the originator of the Kitchen Garden system (Miss Emily Huntington), who shall hold office for life." The annual dues are fixed at one dollar, and a list of the names of fifty members is given.

HISTORY OF THE FIRST YEAR OF THE NEW ASSOCIATION.

From the First Annual Report,* signed by Miss Grace H. Dodge, as corresponding secretary, and dated April 1, 1881, the following extracts are taken:

> In presenting their first annual report the Managers of the Kitchen Garden Association take pleasure in stating that the work they have undertaken has been quite as successful as they anticipated. During the year there have been twenty-nine classes, comprising nine hundred and ninety children, in New York and its vicinity alone. These were taught by volunteer lady teachers, with the exception of two or three who receive salaries, and devote their time to teaching the system. * * *

Classes in some fifteen cities and towns are reported, and the further extension of the system recorded thus:

> The system is being introduced among the colored people. The originator, Miss Huntington, has been to Hampton Institute, Virginia, and trained two of the teachers, as well as the graduating class there. From Hampton, it is hoped and expected that the Kitchen Garden will spread, not only among the colored people of the South, but also that it will be successfully carried to the Indians.
>
> We understand that the system is also being translated and carried to Bombay, India, and we hope by another year to report a class from there. England is becoming interested in the movement. The last copy of the London "Good Words" has in it a most excellent article about our Kitchen Garden system.

WHY THIS DEFINITE TRAINING IS SO IMPORTANT FOR CITY GIRLS.

The following clear statements concerning the educational needs of girls, and of the advantages of such definite training in household industries as is given under this system, commend themselves to the thoughtful consideration of educators, and of all who are interested in elevating the condition of the girl children of the poor in cities:

> There is no limit to the opportunities offered for the free industrial education of young girls; and the Association is limited in its work only by the lack of means. It is the desire of its managers to carry the system into every industrial and public school. The necessity of such an education is becoming more and more apparent, as they become better acquainted with the ways of living among the poor. The tendency of the girl of to-day is not in the direction of household industry. Girls having been through our public and normal schools look down upon housework as debasing, and almost invariably they seek positions in stores, as clerks, sales-women, cashiers, or book-keepers. This avenue of employment is rapidly becoming over-

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*First Annual Report of the Kitchen Garden Association, May 1, 1881. New York, 1881. Pp. 23.

crowded with applicants. There is scarcely anything more difficult than to secure a position in a store. In a large measure this comes from a mistaken feeling of independence. The excitement of store-life attracts many girls. They do not stop to consider the exposure they are subjected to, nor the severe strain upon their constitutions, from the constant standing, improper mid-day food, and inclement weather. Nor, that in a monetary point of view, they are not nearly as well off as the domestic in a private family. No girl, as clerk, can net $15 to $20 per month, as a good domestic can. It is with the greatest difficulty, ordinarily, that she can make ends meet, unless she has her home and board given her by her family. It is to this work of industrial education the Kitchen Garden Association has addressed itself, and it has adopted, as its method of work, the Kitchen Garden system. * * *

Whenever the system has been properly introduced it has been productive of much good. By taking the children when they are young, and training them in household arts in such an attractive way, we hope, in a measure at least, to get rid of the odium they attach to housework. The fact is impressed upon them, that labor of any sort which makes home comfortable is not only not menial, but dignified, and the true calling of every woman. She is not to be ashamed of doing this work, but rather ashamed of not knowing how to do it. The benefit of this instruction is not only seen in the happier, healthier, and neater appearance of the children, but is most apparent in the homes where the parents allow the children to put their lessons in practice. When a child has thoroughly learned all the Kitchen Garden and advanced lessons, she cannot fail to be a useful member of her own or of other households.

TRAINED TEACHERS ESSENTIAL.

The Managers can not lay too much stress upon the importance of teachers being trained for this work before they undertake it. It is a system very similar to the kindergarten system, and as no one undertakes to teach a kindergarten school without having first gone through the regular course of training, so no one should attempt to teach Kitchen Garden without having taken the whole course of normal class lessons. It is only when untrained amateurs undertake to teach that we hear of poor results. One cannot teach others what she does not thoroughly know herself, and this is most emphatically true of a system so varied and new as that of the Kitchen Garden.

PROSPEROUS GROWTH AND PROGRESSIVE PLANS.

The treasurer's account shows the receipt of $994.50, with a balance of $201.46, after paying the year's expenses. The list of members has grown to seventy-nine. Mrs. Augustus Hemenway, of Boston, who has done so much for similar needs there, heads the list of donors. The report closes with a statement of the aggressive purposes of the Managers:

It is the desire of the managers to extend the work, and, if possible, to introduce either the whole or part of the system into every public and industrial school, and wherever opportunity offers. In order to do this, even in part, it is necessary to have money, for the salaries of teachers, for the rental of rooms, piano, for printing, etc.

The Association desires to raise at least $2,000 a year, and it is hoped this may be done by securing annual subscribers, increasing the membership, and by the gifts from those who endorse the work. Donations and subscriptions can be sent to the treasurer, Miss Thomson, 68 Park Avenue, New York City.

GRACE H. DODGE,
Corresponding Secretary Kitchen Garden Association.

262 MADISON AVENUE, *April* 1, 1881.

HISTORY OF THE SECOND YEAR.

The Second Annual Report, dated May 1, 1882, has added, as a motto, on the title-page this appropriate Bible text: "She looketh well to the ways of her household."

In presenting their second annual report, the Managers of the Kitchen Garden Association take great pleasure in stating that the work for the past year has been in every way successful, and that they look forward to renewed and progressive work in the year which is opening before them.

The following extract shows the tendency of growth and development in any really vital idea. As the Kindergarten gave birth to the Kitchen Garden, so the latter, in its turn, suggests a new departure; or, rather, a further application of the original plan invented by Fröbel.

THE FARM GARDEN.

An interesting outgrowth of the Kitchen Garden has been the adapting of its principles by Mrs. Briant (a graduate of the Normal Class) to a system for instructing little boys in the elements of agricultural pursuits. They are taught, by using a large box of earth to work in, and by means of miniature plows, harrows, rakes, hoes, etc., the processes of preparing the ground, sowing the seed, caring for it, gathering in the crops, taking the corn or wheat to the mill, grinding it, and finally leaving it in the kitchen for the women to turn into bread. These are all carried out by the small boys in detail, accompanied by clever question and answer dialogue among themselves, and by either farmers' songs or whistling to a piano accompaniment.

The system has not as yet been fully developed, but it is hoped will grow into a valuable part of a boy's education. It can be seen in operation almost any day but Saturday in the Children's Aid Society Industrial School, 208 West Eighteenth Street.

Reference to a letter from Charles G. Leland, Esq., dated in September, 1883, which is given in Appendix K, of this volume, will show that he claims to have purposely omitted, in the well-known Circular on "Industrial Art in Schools," published by the United States Bureau of Education (Circular No. 4, 1882), the statement that the principles of his System of Design would be equally applicable to the instruction of girls in household duties, and to boys in all the employments of agriculture; and he further suggests the publication of elementary manuals on these subjects for use in schools. His plan seems to comprise the teaching of the theory or "design" of these special industries, both of which Miss Huntington and Miss Briant had reduced to practical lessons long before the date of this letter and, so far, certainly, as relates to the teaching of the arts of the household to young girls, with a success so pronounced as to entirely justify the theoretical judgment expressed by Mr. Leland. Whether the experiments in play-farming for boys will prove as successful, remains to be seen. One difficulty in the practical application of this phase of object-teaching suggests itself at the outset, arising from the fact that by far the larger number of the teachers in the public schools are young women, whose knowledge of the practical details of farming can not as readily be assumed as can that of their familiarity with the details of house-keeping. Whether, too, the use of these toy implements, and the singing by rote of "farmers' songs," so called, be of much greater practical value in fitting and inducing young boys to undertake, as their life-work, the undeniably prosaic, hard, and often repulsive work of the farm, than was the olden children's play of—

Here the farmer takes his stand,
Stamps his feet, and claps his hands,
And turns around to view his lands,
Waiting for a partner;

And closing with the agnostic chorus:

You, nor I, nor no one knows,
How oats, pease, beans, and barley grows,

Which, surely, no one ever before thought of as of any educational value in the practical training of farm hands—may well be doubted.

A SUGGESTION AS TO THE PHILOSOPHY UNDERLYING ALL EDUCATIONAL METHODS.

On the other hand, that, for the older pupils in country schools there would be value in such comprehensive statements of the "design" of farming, the purpose of the farmer's work regarded as a whole, with a showing of the relation of the various kinds of work to that purpose, as is suggested by Mr. Leland, can hardly be questioned. Such intelligent comprehension of the relation of all its parts to a whole, is educational in the highest degree. May there not be found in this suggestion, which is equally applicable to all departments of industrial education, that underlying philosophical principle common to all phases of education, the exposition of which, as elsewhere noted in this Report, President Runkle thought so desirable? When the pupil, or, for that matter, any worker, once understands that any special work on which he or she is engaged, is of value, only, as it is a part of a whole, the necessity that it shall be as exact and perfect as it is possible to make it, is at once realized; since, otherwise, it will not fit in place, and it is then seen that the work put on it has been wasted.

So, underneath the play house keeping of Miss Huntington's little girls, there lurks the ideal of a complete home, in which all the minor details of domestic drudgery are seen to have a relative, as well as positive, value, in the beautiful result to which each and all tend. Here, on this humble plane, scientific methods and religious purpose may meet, illustrating, as sweet George Herbert quaintly shows, how one may make "drudgery divine," if only high motives incite to lowly deeds.

THE PROMOTERS OF THE NEW METHODS PUBLISH FREELY.

The managers of this germinal association, and of its vigorous successor, have, from the first, understood the incalculable value of the printing press as a means of dissemination; and to their free use of printed matter may doubtless be attributed, in a great degree, the rapid growth and varied development of their work. This Second Annual Report closes with the announcement of the forthcoming issue by Ivison, Blakeman & Co. of a new volume. The hand books, etc., prepared by Miss Huntington and issued by Schermerhorn & Co., have already been referred to. Of this new book the report says:

> The special work of the Association, this past winter, has been the preparation of a book on "Household Economy," for use in both public and private schools. The plan was suggested last spring, and in the fall the matter was referred to the printing committee with power to act. The committee, therefore, invited certain members of the Association to prepare the divisions of the book. Two months ago the papers were handed in, and the committee met to revise the matter. It was then handed to Dr. T. M. Coan, a literary expert, who spent some time in most carefully editing the book, and arranging it in chapters and sections. * * * It treats not only of the different departments of the household, but also of hygiene, emergencies, care of the sick, dress, economies, amenities, etc. In looking forward to the coming year, it is earnestly hoped that the Kitchen Garden system should greatly spread, and that all will do what they can towards instructing young girls to live true, noble lives, making them realize that even in sweeping and dusting their room they can put a cheerful spirit, and can do every thing about the house in a manner which may carry out the beautiful precept given us by Saint Paul,
>
> "Whatsoever ye do, do it heartily as unto the Lord, not unto men."
>
> GRACE H. DODGE,
> *Corresponding Secretary Kitchen Garden Association.*
>
> 262 MADISON AVENUE, *April* 4, 1882.

As the history of this very interesting experimental society, and of its transition and new name, is succinctly given in its final official annual report, this, the Fourth Annual Report, is here given in full:

FOURTH ANNUAL REPORT OF THE KITCHEN GARDEN ASSOCIATION.

In presenting this, the Fourth and probably the last Annual Report of the Kitchen Garden Association, it seems wise to review the work of the Association since its organization in January, 1880. The objects as then defined in the constitution were as follows:

First. To promote a wide and correct diffusion of the principles upon which the system has been founded.

Second. To prevent its degenerating into careless and erratic methods of teaching, which might expose the system to misconception in its objects and operation.

Third. To promote uniformity of method and action in all Kitchen Garden schools.

Fourth. To establish a place of reference and consultation for all interested in the system.

Fifth. To provide for the perpetuation of the system.

The Association has been successful in carrying out the first, fourth, and fifth sections, but has found how impossible it is to prevent careless and erratic methods of teaching, or to promote uniformity of action in all Kitchen Garden schools.

SPEEDY ADOPTION OF KITCHEN GARDEN METHODS IN VARIOUS CITIES AND COUNTRIES.

The system during these years has spread in a remarkable manner not only in different parts of this country, but also in Europe and other quarters of the world. There are Kitchen Garden associations in Chicago, Cincinnati, Cleveland, Pittsburgh, Boston, and Yonkers. The second named issues a monthly Kitchen Garden journal, with a good circulation. At Cedar Rapids, Iowa, in a building now being built to be devoted to industrial training, there is to be a large room given up exclusively to Kitchen Garden. The system has been introduced and classes are being taught in many cities in almost every State of the Union. At Hampton, Va., the classes have for the past three years been steadily carried on at the Butler's School, connected with the institution. Members from the graduating classes serve as assistant teachers, and learn much to take with them into the colored schools of the South. In England the interest has increased and the system is slowly gaining headway. The Twenty-fifth Annual Report of the Ladies' Sanitary Association of London gives four pages of most complimentary description to the system, and quotes much from the last reports of our Association. The toys and books are being used in France. The latter have also been introduced during the past year in Italy and Greece. In India, Japan, and China the missionaries are using parts of the system, and it is now so well known that missionaries from other quarters, as they come to New York, want to study its principles, so that they can adapt it to their work.

Formerly, the very term Kitchen Garden was not understood; now it is fully appreciated and loved by thousands of children, who have unconsciously and most pleasantly learnt many practical things from its teachings. Hundreds of homes have been made more neat and bright by the little scholars coming to them from the Kitchen Garden classes. It has been a source of regret that more of these girls have not gone into service, and in that capacity also borne fruit from their lessons. Some have, however, become servants and have given much satisfaction to their mistresses.

The special work in New York of the Association has been the engaging of teachers and the overseeing of Kitchen Garden classes. During the first two years a bright, cheery room was rented from the New York Cooking School, and here classes were held, composed of girls taken from the city grammar schools, both white and colored. The Association teacher also was engaged by several institutions to teach classes. Last winter and this the rent of the room was dispensed with, and the toys sent to two industrial schools. This year Miss Oakley, the teacher of the Association, has been busily engaged; she has two classes every day, excepting Saturday, when she teaches three times. The classes are held at the Wilson Mission, the coffee-house connected with the Fruit and Bible Mission, at the Colored Orphan Asylum and Colored Mission, at Thirtieth Street Memorial, and the Fourteenth Street East Side Chapels, also at the Hudson River Industrial School, and at Pelham, N. Y.

Miss Buchanan, a second teacher and assistant for Miss Oakley, is now being trained, and will soon be fitted to take independent classes.

HAND BOOKS PUBLISHED.

Two books have been compiled and published under the auspices of the Association. The first, "Household Economy, a Manual for Schools," has been in circulation two years. It is being constantly called for, but as yet is not extensively introduced into the public schools, for which it is designed. The other book, "Advanced Lessons and Songs," has been found useful to the numerous Kitchen Garden teachers.

ECONOMICAL AND PROSPEROUS MANAGEMENT OF THE ASSOCIATION.

It is pleasant to report that during the four years there has been incurred no debt, and that no unpleasantness has arisen in the Board of Managers, or among the members of the Association. Mrs. Blagden, the first President, for family reasons, was obliged to resign her position a year ago. The Vice-President, Mrs. Sinclair, was elected to the vacancy, one of the managers taking her office. With this exception there has been no change during the four years among the executives, and but few changes have come into the Board.

A WIDER FIELD OF USEFULNESS OPENS.

The Board for some months past have felt that the Association should undertake new and enlarged work. Several unexpected fields for labor opened up, but with the present constitution could not be entered upon.

After discussion and much thought the following notice was sent three weeks ago to all members of the Association:

"*Resolved,* That at the next regular meeting of the Association, held March 21, the subject of the dissolving of the Kitchen Garden Association, with the view of reorganizing under a different name and upon a broader basis, be presented and action taken thereon.

"It is proposed to make this change because, first, the title Kitchen Garden Association is too limited in its scope; second, experience has proved that a more advanced work in addition is essential; third, it is desirable that industrial training for schools in general, for older pupils and for boys, be added to the present work; fourth, other systems having been developed, it seems advisable to incorporate them with our own.

"In suggesting the dissolving of the present organization, there is no thought in the minds of the Board that any of the past work of the Kitchen Garden Association should be stopped. On the contrary, plans are already being suggested by which many more classes may be started next fall.

"If it is the sense of this meeting, when the vote is taken, that the present Kitchen Garden Association shall dissolve, to immediately reorganize upon a broader basis, the interests of the Kitchen Garden will be put into the hands of a standing committee on Kitchen Garden, which will be composed of those most interested in its spread and correct teaching.

"It is hoped that Miss Huntington, the originator of the system, will herself serve upon the committee, and aid it with her suggestions and hearty co-operation. The other aims and purposes of the proposed new Association will be shortly presented. Workers for it will be much needed, not in name only, but workers full of earnest purposes and entire consecration, who will go into the labor, already laid out, with strong desires to do what they can to raise, strengthen, and educate their poorer sisters, and to make of them capable daughters, wives and mothers.

"GRACE H. DODGE,
"*Corresponding Secretary Kitchen Garden Association.*
"262 MADISON AVENUE, NEW YORK CITY, *March* 18, 1884."

The above report was read at a meeting of the Kitchen Garden Association, held March 21, 1884. When it had been accepted, Mrs. John R. Paddock read a paper on "Industrial Training," which also presented in detail the reasons for the dissolving of the Association, and the aims and scope of the proposed new organization. The following motion was then made: "That the Kitchen Garden Association dissolve, to immediately reorganize under a new name, and upon a broader basis." The vote by ballot was unanimous in favor of the proposed change. A chairman and secretary *pro tem.* were then appointed, and after the necessary forms were carried out the Industrial Educational Association was formed. Officers were elected, and a constitution adopted.

After the first year the Treasurer's accounts show that the annual expenses incurred by the Kitchen Garden Association averaged about three hundred dollars. It will be seen by reference to the Treasurer's reports of the Industrial Education Association that the receipts and expenditures of the new society were at once largely in excess of those of the former, and that they have rapidly increased with each succeeding year; thus showing conclusively the constant growth in the work of the society, and in the number of contributors to whom it successfully appeals for support.

The following is the list of officers for 1883–'84, under whose administration it was decided to disband the Kitchen Garden Association and form a new corporation, to be known as the Industrial Education Association of New York City—a wise and fortunate movement, as has been fully demonstrated:

Officers.—President, Mrs. John Sinclair; Vice-President, Miss Mary Agnew; Secretary and Treasurer, Miss Elizabeth M. Thomson; Corresponding Secretary, Miss Grace H. Dodge.

Board of Managers.—Mrs. W. S. Wellington, Mrs. H. O. Havemeyer, Mrs. George C. Clark, Miss Livingston, Miss C. T. Lawrence, Miss Rosalie Rapallo, Miss Winslow, Miss Sloane, Miss Trotter, Miss Margaret R. Agnew, Miss Hollins, Mrs. John R. Paddock, Miss C. S. Whitfield, Miss Sharpless, Miss Emily Huntington, *ex officio.*

Advisory Committee.—Mrs. Jonathan Sturges, Mrs. Augustus Hemenway.

The Industrial Education Association of New York City.

From the First Annual Report of the new society, issued in April, 1885,* are taken the following extracts, which reveal the wider scope and increased activity which characterize the new departure:

In presenting the First Annual Report of the Industrial Education Association it seems wise to state the objects for which it was organized.

First. To obtain and disseminate information upon industrial education and to stimulate public opinion in its favor.

Second. To invite co-operation between existing organizations engaged in any form of industrial training.

Third. To train women and girls in domestic economy, and to promote the training of both sexes in such industries as shall enable those trained to become self-supporting.

Fourth. To study and devise methods and systems of industrial training, and secure their introduction into schools; also, when expedient, to form special classes and schools for such instruction.

Fifth. To provide instructors for schools and classes, and, if necessary, to train teachers for this work.

The work of this first year has been largely one of preparation. To place the new organization upon a firm basis; to secure the interest and co-operation of those already actively engaged in various forms of industrial training; to unite in the board of management such as could most effectually promote its objects; to investigate the work done by existing organizations, and to discover the most practical avenues for further efforts, were matters of great importance, and have demanded a large expenditure of time, thought, and effort. The contrast between the feeble beginnings of one year ago and the position occupied by the Association to-day justifies the wisdom of this course.

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* First Annual Report of the Industrial Education Association, April, 1885. Office No. 21 University Place, New York City. Pp. 31.

Not only has the Association accomplished much practical work, but by means of private interviews and through the public press it has presented its objects, tested the sympathy of the community with its purposes, deepened the conviction of their importance, and received the approval of many thoughtful men and women.

THE COMMITTEES AND THEIR DUTIES.

Having already stated the objects of this Association, the methods proposed for their accomplishment claim our attention. The various interests of the Association have been intrusted to the care of four committees, viz: Committee on finance, committee on books and printing, committee on industries, and committee on domestic economy.

THE FINANCE COMMITTEE.

To the committee on finance belongs the duty of devising ways and means to secure the funds needful to carry on the work, a duty by no means insignificant when we remember that a considerable outlay must necessarily attend the earlier stages of this work. Funds are needed to train teachers, to provide suitable books of reference, to establish classes in manual training, and to issue such publications as may promote the interests of the cause.

Early last fall this committee issued a circular, setting forth the nature and needs of the work, which in most instances met a very cordial response. Thus far the donations and subscriptions received have been sufficient to meet immediate needs, though not enough to inaugurate all the work the Association had in view.

COMMITTEE ON BOOKS AND PRINTING.

The committee on books and printing prepares for the press publications to be issued by the Association, selects such books as can be recommended for use in schools and classes, and disseminates, through the public press, information calculated to promote an intelligent interest in Industrial Education. To this committee belongs the selection of books for the Association library, to be secured by donation or purchase. The nucleus of a library has already been obtained.

The manuals of Advanced Lessons in Kitchen Garden and Domestic Economy, prepared by the organization of which this Association is an outgrowth, are recommended by this committee for use in schools and classes. The committee has also in preparation Mrs. Briant's Lessons in Agriculture, an ingenious development of the Kitchen Garden system, by which little boys are instructed in the elements of agricultural pursuits, using a large box of earth, with miniature plows, harrows, rakes, and hoes.

A paper on "Industrial and Technologic Education" was prepared for the National Conference of Charities and Corrections by Mrs. John R. Paddock. This paper contained a valuable summary of the whole subject, and presented a most forcible argument in its favor. Five hundred copies were issued in pamphlet form, and have been widely circulated, the demand indicating the attention which this subject is now claiming.

COMMITTEE ON INDUSTRIES.

To the committee on industries has been assigned the task of devising methods of industrial training suitable for introduction into schools, reformatories, orphanages, asylums, and other institutions. Upon it devolves a large share of the student work which is an essential element in the efforts of this Association. To ascertain what can be done to further the introduction of industrial training, it is necessary to understand thoroughly the existing systems of public and private education, and to know the industrial methods pursued in this and other countries. Only by close acquaintance with all the facts of the case will it be possible to devise adequate measures to secure the adoption of practical manual training as a feature in all education.

SUB-COMMITTEES ON INDUSTRIES.

The scope of this work is so large that it naturally suggests the division of labor by the formation of sub-committees, to whose care special interests are delegated. Already we have sub-committees on Schools and Classes, on Reformatories, on Asylums for the Insane, and one on Orphanages will soon be added. By these committees a large number of public and private schools, reformatories, and asylums have been visited, together with many institutions where industrial training is given. Some of these will be found enumerated in the Appendix of this report.

While it is most gratifying to discover the amount of volunteer and private effort in behalf of Technologic and Industrial Training in New York City and vicinity, indeed throughout the whole country, the fact remains that these efforts reach but a small percentage of the population, and leave a large want totally unsupplied. In the judgment of the committee of industries, this want can be best supplied by making the training of the hands, no less than the training of the head, a part of the general system of education. Mature deliberation convinced the committee that the best way to secure the desired result would be to establish centres where, by practical experiment, the value and feasibility of manual training could be demonstrated. Recognizing the power that would accrue to such a movement by identifying it at once with the public schools of New York City, application was made to the Board of Education for the use of a school building one afternoon in the week for the purpose of holding classes, after the regular school hours, in sewing, domestic economy, designing, modelling, simple carpentry, and the use of tools; the Association to assume the entire care and expense, and the classes to be open at all times to the inspection of teachers and trustees of the public schools and members of the Board of Education. This petition was signed by prominent citizens, representing a variety of influential interests and a strong public sentiment in favor of the introduction of manual training. In presenting this petition much encouragement was derived from the fact that the board has already appointed a committee on industrial studies, whose intelligent appreciation and deep interest in the subject promise favorably for its future development. That this petition has not yet been granted is not a matter for discouragement. Time is needed to prepare the way for a movement of such vast importance, and we have every confidence that the results achieved by other cities in the direction of manual training will sooner or later be reached in our own. Members of the committee on industries are now testing a system of graded sewing, with a view to preparing a course suitable for introduction into public schools. This committee is also actively engaged in devising plans for the instruction of boys in various manual arts, and the future efforts of the Association will be largely in their behalf. At present, attention is specially directed to boys from six to twelve years of age, who need something to follow the kindergarten, and continue the manual training there begun until they are old enough to use the carpenters' and machinists' tools.

COMMITTEE ON DOMESTIC ECONOMY.

The committee on domestic economy takes for its special field to encourage the training of women and girls in the various departments of household work, and aims to promote a more general interest in the study of Domestic Economy. Under the auspices of this Committee the work of the original Kitchen Garden Association is also continued, and efforts made to secure the extension of the Kitchen Garden system as an elementary training in household work. This committee has made special efforts to introduce the study of domestic economy into the leading private schools of the city. Much success has followed these endeavors, and fifteen classes have been established in well-known schools.

These classes were under the care of Miss Julia H. Oakley.

* * * In several of the girls' clubs and friendly societies evening classes have been held, and by this means an equal number of working girls have received an impulse in favor of practical household management.

In the Eleventh Street Home for Destitute Girls the happiest results have attended Miss Oakley's teaching. Here a part of the time is devoted to explaining the theory, and the balance to the actual performance, of household duties, under Miss Oakley's direction. As the inmates of this home remain but a short time, several classes, including about sixty girls, have been under instructions, and the managers of the home, in their recently-published report, acknowledge the good results of this practical training.

Classes in Kitchen Garden are also held in St. Mark's, St. Augustine's, Romeyn, and Memorial Chapels, in the Model and Improved Tenements, Cherry and Seventy-second Streets, and at the coffee-house of the Bible and Fruit Mission. These are in charge of Miss Buchanan, who has been specially trained for the work, and gives great satisfaction in it.

CLASSES IN COOKING.

In securing the objects of this committee valuable aid is rendered by the New York Cooking School, which co-operates with us most successfully in supplying that instruction in cooking so indispensable to a thorough household training. Under the care of the New York Cooking School twenty classes have been established, chiefly in mission chapels and societies of working girls. Seven teachers are already employed and more will be ready for the work next year. The beneficial results of this training are daily seen. Girls are made capable of caring for their homes, women become better household managers, and men secure happier and more comfortable homes.

Last fall the Association was invited by General John Eaton, United States Commissioner of Education, to represent its work in the Industrial Department of the New Orleans Exposition. After mature deliberation it was deemed inexpedient at this early stage to attempt any such representation.

For the past year the Association has shared the rooms of the Society for Instruction in First Aid to the Injured. An office has now been secured at 21 University Place, the rent of which has been pledged for one year.

GENERAL WORK OF THE ASSOCIATION.

In this connection we may allude to the more general work of the Association. Efforts have been made to establish correspondence with those known to be interested in this subject, and with such institutions as have already made progress in any department of industrial training. The prompt and cordial responses received, and the readiness shown to co-operate in the aims of the Association, attest the liberal spirit which animates the whole movement in favor of industrial education.

Through Mr. Charles G. Leland we have been put into communication with Mrs. E. L. Jebb, who has done such an important work in establishing the Home Arts and Industries Association, already accomplishing such good results in Great Britain. Mrs. Jebb has consented to become a corresponding member of our Association, and through her we learn of a remarkable hand-work movement in Sweden and Finland. Thus it is that our sources of information are constantly increasing and our work broadening. Even in one short year the Association has become widely known, and requests for information and assistance in industrial projects come from all parts of the country. Arrangements have just been completed for sending Miss Oakley to train a normal class in Toronto, Canada, where a favorable opening for industrial work is presented.

References follow to the desirableness of the introduction of some forms of industrial training in all reformatories and orphanages.

TO INTRODUCE INDUSTRIAL TRAINING IN SCHOOLS THE PRIME OBJECT.

These various institutions offer wide opportunities for testing the value of industrial education, but they are not to take precedence of the greatest and most important part of our work. Recognizing the force of that oft-quoted saying, "What we wish to see introduced into the life of the nation must first be introduced into the life of its schools," and placing beside it the no less evident fact that "every form of industry now demands the ingenious brain and the cunning fingers of educated labor," we see at once the future work of the Industrial Education Association. The scientific and technologic schools and colleges, the agricultural colleges, industrial universities, and manual training schools already established have done much toward the solution of this great problem, but the work is only just begun. "What we need," it has been well said by an English writer, "is to liberate the hand-power which is now going to waste, just as we have set free the brain-power."

This is our object, and the indications are that before many years the claims of industrial education will be admitted as co-equal with those of general elementary education.

For the Board of Managers,

JANE P. CATTELL, *Secretary.*

APRIL 7, 1885.

The following by-laws show the purpose and form of organization of the new society, and are here given in full, for the convenience of those who may wish to form similar organizations.

BY-LAWS OF THE INDUSTRIAL EDUCATION ASSOCIATION, NEW YORK.

I. TITLE.

The name of the Association shall be the Industrial Education Association.

II. OBJECTS.

The objects of the Association shall be:

First. To obtain and disseminate information upon Industrial Education, and to stimulate public opinion in its favor.

Second. To invite co-operation between existing organizations engaged in any form of Industrial Training.

Third. To train women and girls in Domestic Economy and to promote the training of both sexes in such industries as shall enable those trained to become self-supporting.

Fourth. To study and devise methods and systems of industrial training and secure their introduction into schools; also, when expedient, to form special classes and schools for such instruction.

Fifth. To provide instructors for schools and classes, and, if necessary, to train teachers for this work.

III. MEMBERSHIP.

The Association shall consist of members of the Central Association, corresponding members, and honorary members. *Members of the Central Association* shall conduct the active business of the Association, and shall be residents of New York City or its vicinity. *Corresponding members* may be residents of any part of the United States or of foreign countries; they shall be requested to send to the secretary information bearing upon the objects of the Association, but shall not be responsible for any action taken by the Association, nor shall they be obliged to adopt the principles advocated by the Association. *Honorary members* shall be chosen for valuable aid rendered the Association or for distinguished services in behalf of industrial education. Members of the Central Association shall be entitled to vote at the annual meeting of the Association and upon the admission of new members at any meeting.

IV. ELECTION OF MEMBERS.

All members shall be elected by a majority vote of members present at any meeting of the Association. Application for membership must be made through a member of the Association, who shall send the name of the proposed member to the board of managers; if approved by the board, the name shall be submitted to the vote of the Association. The failure of any member to attend three consecutive regular meetings of the Association, without notifying the secretary, may be considered as equivalent to a resignation.

V. BOARD OF MANAGERS.

The Association shall be controlled by a board of managers, to consist of fifteen persons, who shall be elected annually by a majority vote, by ballot, of members present at the annual meeting. Any vacancy occurring during the current year shall be filled by the board of managers from members of the Central Association. It shall be the duty of the board of managers to devise and adopt such measures as may best promote the objects of the Association and increase its efficiency. The board shall have full power to control the affairs and funds of the Association. It shall have authority to enforce the observance of the by-laws of the Association, and shall have power, by a two-thirds vote of its members, to remove any member from the Association for such cause as it may deem sufficient, other than non-attendance at meetings.

The Board shall appoint the Chairmen and members of the standing committees from the members of the Association annually, immediately after the annual meeting, and shall have power to add additional members to said committees at any time. Members of the Board of Managers shall be *ex-officio* members of all standing committees. Nothing shall be published in the name of the Association without the consent of the Board of Managers.

The Board of Managers shall hold monthly meetings from October till May, inclusive, and oftener if desirable. Five members shall constitute a quorum. It shall make its own by-laws. The Board shall make a full report of the affairs and funds of the Association to the Association at its annual meeting.

VI. OFFICERS.

The Officers of the Board of Managers shall be a President, one or more Vice-Presidents, a Treasurer, an Assistant Treasurer, a Recording Secretary, and a Librarian. They shall be elected annually from the incoming Board of Managers, by a majority vote, by ballot, of Members of the Board.

The Officers of the Board of Managers shall also be the Officers of the Association, and shall hold office until their successors are elected or appointed.

VII. President and Vice-President.

The President shall preside at all meetings or appoint a substitute; shall call special meetings at discretion, or upon the written request of five members; shall appoint special committees, and shall have charge of the general interests of the Association.

Prior to the annual meeting the President shall appoint a committee to nominate the board of managers for the ensuing year, and an auditing committee to examine and report upon the accounts of the Association. The members of these committees shall not be members of the Board of Managers.

A Vice-President shall, in the absence of the President, perform all the ordinary duties of the President.

VIII. Treasurer.

The Treasurer shall be charged with the custody of the securities and funds of the Association; shall keep an account, in the name of the Association, in an institution approved by the Board of Managers, in which he shall immediately deposit all moneys received. The Treasurer shall keep an account of all receipts and disbursements, and shall pay no moneys except by order of the Board, or on the authorized warrant of the Assistant Treasurer. The Treasurer shall present monthly written reports to the Board and an annual report to the Association. The financial year of the Association shall end March 31.

IX. Assistant Treasurer.

The Assistant Treasurer shall keep a complete list of the subscribers and donors and collect the subscriptions; shall attend to all details pertaining to receipts and disbursements, keeping an accurate account of the same, and once in each month transmit to the Treasurer a statement, and pay to the Treasurer all moneys received. The Assistant Treasurer shall draw upon the Treasurer for all salaries and for current office expenses; all other bills must be presented to the Board of Managers and receive their certification before being paid.

X. Recording Secretary.

The Recording Secretary shall be Secretary of the Board of Managers; shall call the roll, and keep the minutes of the proceedings of the Board; shall notify officers of their election and committees of their appointment, and shall give notice of all meetings of the Board.

XI. General Secretary.

The General Secretary shall be appointed and removed by the Board of Managers, and shall be the chief executive official of the Association, responsible for the management of its affairs, under such general rules as may be adopted by the Board of Managers. The General Secretary shall conduct the correspondence of the Association; shall do organizing or other work required by the Board; shall keep minutes of the proceedings of the Association, and give notice of its meetings; shall receive and file the reports of the different committees, and keep any accounts and records of the Association that may be required. The General Secretary shall write the annual report of the Association, and make written monthly reports to the board of managers. An account of money expended by the General Secretary for current, office, and travelling expenses shall be rendered monthly to the Assistant Treasurer.

XII. Librarian.

It shall be the duty of the Librarian—

First. To collect, by means of donations to the Association, such books and pamphlets as may, in the judgment of the Librarian, contain valuable information upon subjects connected with the objects and work of the Association, and to make a catalogue of the same.

Second. To adopt a system by which the books may be available to all the members of the Association as freely as may be consistent with a due regard for their preservation.

Third. To make written reports from time to time of donations and loans to the library at the regular meetings of the board of managers and of the Association. The librarian shall, before the regular meetings of the standing committees, send to the secretary of each committee, to be laid before the committee, a list of any books, pamphlets, or drawings, given or loaned since the previous meetings, which have reference to the work of that committee.

XIII. Standing Committees.

There shall be four or more standing committees, as follows:

(*a*) Committee on finance.
(*b*) Committee on books and printing.
(*c*) Committee on industries.
(*d*) Committee on domestic economy.

The committees shall make written monthly and annual reports of their work at the regular meetings of the board of managers. They shall make their own by-laws.

Estimates for expenditures by standing committees, other than for petty expenses, must be approved by the board of managers. Manuscript designed for publication must receive the approval of the standing committee from which it emanates before being submitted to the board of managers.

XIV. Committee on Finance.

It shall be the duty of the committee on finance to devise means for obtaining the funds requisite to carry on the work of the Association.

XV. Committee on Books and Printing.

It shall be the duty of the committee on books and printing to prepare for publication such matter as the board may authorize; to keep itself informed of publications upon industrial education and pursuits and, with the approval of the board, to procure for use in the library, or for distribution, those deemed of special value.

XVI. Committee on Industries.

It shall be the duty of the committee on industries to study, devise, and present, for the consideration and approval of the board, methods and systems calculated to develop industrial education, and to use all available means to introduce the same into schools, reformatories, asylums, orphanages, and such other institutions as may offer a suitable field.

XVII. Committee on Domestic Economy.

It shall be the duty of the committee on domestic economy to encourage the study of this subject, and to promote the thorough training of women and girls in every department of house-work. In securing this end opportunities offered by cooking schools or other existing organizations shall be used; classes shall be established, and such other agencies as may best promote this object.

It shall also be the duty of this committee to promote an intelligent interest in the kitchen garden system, and to further its introduction whenever it may be of value as an elementary training in household work.

XVIII. MEETINGS.

The annual meeting of the Association shall be held during the month of April. Two weeks' notice of this meeting shall be given to all members entitled to vote.

At any special meeting of the Association the business for which the meeting is called shall be stated in the notice to members. Eleven members shall constitute a quorum at any meeting of the Association.

XIX. BY-LAWS.

The by-laws of the Board of Managers and of the Association must be in accordance with the general act of incorporation, chapter 319, laws 1848, with amendments, State of New York.

XX. AMENDMENTS.

These by-laws may be amended by a two-thirds' vote of members present at any meeting of the Association, intention to move the proposed amendment having been sent to the secretary three weeks previous to the meeting. The secretary shall send to each member of the Central Association, and each advisory member, two weeks' notice of this meeting, with a copy of such proposed amendment. To constitute a quorum at this meeting not less than two-thirds of the members must be present.

XXI. ORDER OF BUSINESS OF THE ANNUAL MEETING.

The following shall be the order of business at the annual meeting of the Association:

(1) The secretary shall read the minutes of the last annual meeting. Action thereon.
(2) Report of the treasurer. Action thereon.
(3) Report of the board of managers. Action thereon.
(4) Election of incoming board of managers.
(5) Election of new members.

The Treasurer's report shows an income of $2,015.52, with a balance of $470.48 in excess of the expenditures for the year.

The list of the officers of the new society during the first year is given below. The list of "members of Central Association," which contains many of the best New York City names, numbers seventy-nine. The list of twenty-two honorary members shows the extent of interest taken in this undertaking and from how many sources it is to be sustained, beginning, as it does, with the name of the venerable President of Columbia College, followed by that of Charles L. Brace, the noble pioneer in the practical work of rescuing city children from the slums of New York. These are followed by the names of the genial public-spirited President of the New York Central road; of the United States Commissioner of Education; of a leading Hebrew Rabbi of the city; of the Episcopal Bishop of New York; and by those of representative clergymen of the Catholic, Presbyterian, Episcopalian, and other Churches; the names of the mayors of New York and of Brooklyn, and of several well-known merchants follow; and not least are the names of the two women known in New York and in Boston for every good work, Mrs. Jonathan Sturges and Mrs. Augustus Hemenway. There were also seven corresponding members.

The names comprising this list of the members and officers of the new society were in themselves a guarantee of the efficiency and success of the movement.

INDUSTRIAL EDUCATION ASSOCIATION.

[No. 21 University Place, New York.]

OFFICERS, 1885–'86.

President, General Alexander S. Webb; Vice-President, Miss Grace H. Dodge; Treasurer, Mr. John S. Bussing; Assistant Treasurer, Miss S. Edwina Brown; Secretary, Miss Jane P. Cattell; Librarian, Mrs. John R. Paddock.

BOARD OF MANAGERS, 1885–'86.

General Alexander S. Webb, Miss Grace H. Dodge, Mr. John S. Bussing, Miss S. Edwina Brown, Mrs. John R. Paddock, Mr. Samuel Thorne, Mrs. William T. Blodgett, Mrs. Theodore Bronson, Mr. John D. Wing, Mr. George Walton Green, Mrs. David M. Turnure, Mrs. Theodore Irving, Mr. J. W. Pinchot, Mr. William A. Potter, Mr. William F. Bridge.

STANDING COMMITTEES.

Committee on Finance.—Mr. John S. Bussing, Chairman; Miss S. Edwina Brown, Secretary; Mrs. Franklin Allen, Mr. J. W. Pinchot, Mrs. William A. Street, Mrs. David M. Turnure, Mr. John D. Wing.

Committee on Books and Printing.—Mrs. John R. Paddock, Chairman; Mrs. A. A. Evstaphieve, Secretary; Miss J. N. Demarest; Miss C. T. Lawrence; Miss E. M. Thomson; Miss Adele Turnure.

Committee on Industries.—Mr. William A. Potter, Chairman; Miss Katherine Van Nest, Secretary; Mrs. Archibald Alexander, Mr. Charles A. Barnard, Mr. William F. Bridge, Mrs. John S. Bussing, Mrs. Joseph H. Choate, Miss Grace H. Dodge, Mrs. A. A. Evstaphieve, Mr. George Walton Green, Mrs. Egbert Guernsey, Mrs. Robert S. Hayward, Mrs. J. A. Hewlett, Miss Howe, Mrs. W. S. Hoyt, Mrs. C. W. Ide, Mrs. Theodore Irving, Mr. C. E. Merrill, Mrs. John R. Paddock, Mrs. C. M. Parker, Mr. J. W. Pinchot, Miss Rosalie Rapallo, Mrs. Andrew J. Rickoff, Mr. Theodore Roosevelt, Miss A. P. Slade, Mr. E. D. Spring, Mrs. Francis Lynde Stetson, Mrs. William A. Street, Miss M. H. Trotter, Mr. William Whitlock.

Committee on Domestic Economy.—Miss S. Edwina Brown, Chairman; Miss Rosalie Rapallo, Secretary; Mrs. Franklin Allen, Mrs. Theodore Bronson, Miss Blanche Brown, Mrs. A. T. Clark, Miss Charlotte T. Lane, Miss C. T. Lawrence, Miss M. L. Perlee, Mrs. James Pyle, Miss Marion Sharpless, Mrs. John Sinclair, Miss A. L. Denny, Miss Virginia Hollins, Mrs. David M. Turnure.

Special Committee on Organization.—Miss Grace H. Dodge, Miss Jane P. Cattell.

THE SECOND YEAR'S WORK.

The Second Annual Report,* issued April, 1878, is a handsomely printed pamphlet of 60 pages, the increase in size being itself significant of the rapid growth of the Association; an inference which is confirmed by a perusal of its contents, which give evidence not only of much work which has been actually accomplished, but are indicative of far-reaching plans for future usefulness. The society is seen to be actively reaching out in many directions. It contains the customary lists of the names of officers, members, and contributors, with an account of the work of the year. Copies of the act of incorporation, under date of March 18, 1886, and of the by-laws, are also included. In addition to these features, common to society reports, there are three appendices, one of these being a special report by the committee in charge of the Children's Industrial Exhibition given under the auspices of the Association in the spring of 1886; the other two are made up of interesting and valuable lists, useful not only to the members of this Association, but to all interested in the subject of industrial education.

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*Second Annual Report of the Industrial Education Association, April, 1886. Office, 21 University Place, New York City. Pp. 60.

Of these, one (Appendix B) comprises a list of some sixty-two schools and institutions with which "the Association has been in communication during the past year. A brief outline of the industrial training carried on in each is given." The following clause from the few words which preface this list, gives a glimpse of the comprehensive purposes of this Association of aggressive, eager workers. "In time it is hoped to make a complete directory of industrial schools and institutions." That is, this two years' old society proposes for itself as a field for occupation nothing less than the whole United States. Its clients are all school children; its purpose, universal industrial education.

Appendix C comprises a list of the books and pamphlets in the library of the Association. These are arranged under 282 titles, and include official reports, catalogues of schools and institutions, many addresses and papers on industrial educational topics, a few practical text-books, manuals and hand-books, a variety of kindergarten literature, and a collection of catalogues of reformatories, orphanages, and asylums.

Of books directly treating of manual training Mr. Runkle, Mr. Woodward, Mr. Leland, and Mr. Ham are the most prolific authors. The authors of addresses and pamphlets include the names of the more widely known advocates of industrial education.

The following extracts from this report show the growth and modification of the work of the Association during its second year. Its purposes and methods are so clearly and succinctly stated, that very full quotations are here made. As a pioneer association, occupying a new field, its plans and its methods in detail are of interest to all who, in other cities and towns, meet with like problems. It will be noticed that a large number of new sub-committees were appointed for the year to take charge of various specialties. A subdivision of authority which, as is shown in the report of the following year, proved unwieldy, and was therefore discontinued after this experience of a single year.

SECOND ANNUAL REPORT OF THE INDUSTRIAL EDUCATION ASSOCIATION.

In presenting to the public this Second Annual Report of the Industrial Education Association, it seems important to define more clearly than has hitherto been done the position held by the Association.

The use of the word *industrial* has been construed as indicating the purpose of the Association to teach trades, or to introduce the teaching of trades as a feature of public education. This is not the case; but we hold that "there is an industrial training, which is neither technical nor professional, which is calculated to make better men and better citizens of the pupils, no matter what calling they may afterward follow; which affects directly, and in a most salutary manner, the mind and character of the pupil, and which will be of constant service to him through all his life, whether he be wage-worker or trader, teacher or clergyman. The training of the eye and of the hand are important and essential elements in all good education. These elements the State is bound to furnish." *

To promote their introduction into schools of all grades, both public and private, is the great object of the Industrial Education Association. But, while this must ever be its chief aim, it will not do to overlook the welfare of those for whom changes in the school curriculum will come too late; who need now to have the education of the head supplemented by special opportunities for the training of the hand, whose demand for preparation for the every-day duties of life is too urgent to be ignored or denied. Thus, until the schools supply the education towards which all the influences of to-day seem to point, it is clearly within the province of the Industrial Education Association to combine both phases of the work. There is no reason why the two should not be harmonious, since both propose the same ultimate end—the development of character and the cultivation of all the faculties for the stern uses of practical life.

During the past year the Industrial Education Association has been incorporated under the general act for the incorporation of such societies. Its objects are now legally defined, in accordance with the annexed by-laws. How these objects are carried out will be shown in the following pages.

As a means of making the work known, two public meetings were held during the year, one in November, when the work of the Association was presented to an appreciative audience, and able addresses on the general subject of industrial education were made. The other was on the occasion of the opening of the Eleventh Street house, where, while the general work was the prominent topic, the interest of guests centered largely in the inspection of the thoroughly equipped training school.

The growth of the work has necessitated some changes in the details of organization; new committees have been formed, and others reorganized. The committee on domestic economy has, by its own request, been dissolved. In its place we have the committee on houses and training of servants, which assumes one part of the work, the rest being transferred to the committee on industries, which now includes among its sub-committees one on household industries. The large work of the committee on industries has been reorganized, and divided among the following sub-committees: On household industries, mechanical industries, industrial arts, bureau of teachers, plans for outside organizations, and vacation schools. The former sub-committees on industries for reformatories and orphanages, and on industries for the insane, have assumed the dignity and importance of standing committees, and one on kindergartens has been added.

For the purposes of this report, the old order of committees will be observed, the work of the committee on finance first claiming attention. The income of the Association is derived solely from annual subscriptions and donations. Special contributions have been solicited during the past year to meet the expense of special work, and liberal donations have been received for the rent and furnishing of the Eleventh Street house. To aid in maintaining the training school for servants, a sum of money has been pledged by the Young Women's Aid Association. It is cause for gratitude that, amid the many claims upon the liberality of our citizens, the Industrial Education Association has thus early found recognition. Thus far the income received has been enough to defray running expenses, but funds are now needed to train teachers, to meet the expense of the classes already begun, to establish vacation schools, and to enlarge in many directions the usefulness of the whole work. During the year the finance committee has issued collection books for the use of members of the Association, and prepared a brief circular setting forth its needs.

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* Washington Gladden, in April "Century" (1886).

THE WORK OF COMMITTEE ON BOOKS AND PRINTING.

The committee on books and printing reports three hundred additions to the library, which now numbers about four hundred books and pamphlets. Our funds have not justified much outlay for new books, but several of the more important recent publications have been donated, and proved valuable sources of information. It is hoped to extend the scope and usefulness of this branch during the coming year. This committee has in preparation manuals suited for use as text-books or in promoting the general interest of the cause.

Two thousand copies of the First Annual Report were printed, and although at the time the supply seemed most liberal, it was exhausted before the year was out, and more could have been used to advantage. A leaflet of quotations from authorities on Manual and Industrial Training was prepared, and one thousand copies have been circulated.

In October last the Association was represented at the conference of Women's Christian Associations, held at Cincinnati, by a paper on Industrial Education, prepared by the secretary. By request, this paper was published in pamphlet form, and five hundred copies have been used to meet demands from most unexpected sources.

A catalogue of the Children's Industrial Exhibition is among the publications for the past year. This catalogue contains brief mention of the industrial methods in upwards of sixty schools and institutions represented in the exhibition, and contains much valuable information, available in no other form. Three thousand copies were printed, and a large number have already been sent to all parts of the country.

More than fifteen hundred copies of various valuable articles on Industrial Education have been circulated by the Association. In addition to the above, nearly twenty thousand circulars, bearing upon the different departments of the work, have been scattered throughout the length and breadth of the land. If the Association had employed no other means to promote the cause of manual and industrial training than the power of the printed page, it would still have done an important work and exerted a wide influence.

THE WORK OF THE COMMITTEE ON DOMESTIC ECONOMY.

The classes so successfully carried on last year by the committees on domestic economy have been continued with unabated interest and success. Frequent calls from out-of-town schools have been the means of extending the work into new fields. The study of domestic economy has this year been introduced into five new schools. In Miss Judkins' Philadelphia Seminary, three classes have been taught each week for the past six months. At the Ogontz School near Philadelphia, at Miss Masters' School at Dobb's Ferry, and at Miss Mackie's at Newburgh, courses of lectures have been given. Everywhere the results are most satisfactory, and teachers and pupils bear grateful testimony to the value of this practical teaching.

Classes have been continued in some of the leading New York schools, and a course given to young ladies who have left school. At the Eleventh Street training school a large and enthusiastic class of grammar-school girls have been under instruction, and in several of the working-girls' clubs and girls' friendly societies in this city and in Yonkers evening classes have been held. * * *

Accounts of normal classes in Toronto, Canada; in Rochester, New York, and in Philadelphia, follow.

The Little Housekeepers' classes have been increasingly popular, and several new classes have been formed this year. The value of these lessons, by which children are taught the rudiments of household knowledge, cannot be over-estimated. They form an appropriate stepping-stone to the course in Domestic Economy and the Cooking School.

Early in the year plans were formed for opening a Training School, and efforts made to secure the necessary funds and a suitable house. Circumstances beyond our control combined to delay the accomplishment of this purpose until January last, when a house was found admirably adapted to our needs. Special donations were secured to defray the rent, and on January 15 the house, 54 E. Eleventh Street, was leased until May 1, 1887. Just at this time we were fortunate in securing the services of a Superintendent whose former experience specially qualified her for the difficult task of organizing this work. The new house was speedily fitted to its uses, thoroughly furnished and equipped by special donations. Through the co-operation of the principals of neighboring public schools classes were at once started in cooking, sewing, domestic economy, and in industrial drawing and clay modelling; the latter being open to boys as well as girls. In every branch additional classes had to be formed to accommodate the numerous applicants, and it soon became a perplexing problem to find room for all.

CLASSES OF PUBLIC SCHOOL CHILDREN.

These classes, being designed for children of the public schools, could only be held after school hours and on Saturdays. Every room was utilized to its utmost capacity. The long parlor is the pleasant home of a kindergarten for the five school-day mornings. In the afternoons and on Saturdays it is occupied by sewing classes or by the little housekeepers. The back parlor, or superintendent's dining-room, had to be turned into a class-room to accommodate the normal sewing class and the class in domestic economy. In the large front room on the second floor, cooking classes meet every afternoon and Saturday morning. The back room is occupied alternately by classes in sewing and in drawing and clay modelling. Since the opening of the house twenty-one classes, besides the daily kindergarten, have been held weekly, and three hundred and twenty-seven pupils have been under instruction. None of these classes are free, but the terms are in all cases most moderate, averaging from five to ten cents per lesson. The advantages offered are the best, and the fees received by no means cover the expenses. The total number of pupils in classes taught under the auspices of the Association during the year is nineteen hundred and four.

The interest shown by some of the public school teachers is most gratifying. At much personal inconvenience they have brought their pupils to join the classes. One teacher of a night school begged that something might be started to fill the place left vacant by the closing of these schools. The result was the formation of two evening classes in cooking, with twenty girls in each. The further interest of the teachers is indicated by their request that classes might be formed for themselves, and we have now a large class of teachers studying industrial drawing, clay modelling, and cooking, for their personal benefit.

Much might be said of the wholesome influence of all these classes; of their value in teaching the dignity of labor; of the high ideal set before the young cooks in the beautiful motto from Ruskin which hangs in their cooking-room; of the exquisite order and neatness required in every department; of the surprising interest shown in the sewing classes; the enthusiasm in the modelling-room, the delight of the younger children in the little housekeepers, and of the older girls in the domestic economy classes. But we pass to the consideration of a smaller but no less important department in the Eleventh Street house—that for the training of servants.

THE TRAINING SCHOOL FOR DOMESTIC SERVANTS.

Rooms are reserved for the accommodation of fifteen inmates, who are received for a three months' residence and course of training. During this time they receive no wages, but give their services in performing the work of the house. Thorough training in every department of household work is afforded, and a course of lessons in plain sewing given to each girl. At the end of the three months it is the intention of the committee in charge to provide suitable situations and to exercise a watchful care over the interests of the pupils. Three months' satisfactory residence in the house, with three months' satisfactory service in a family, will entitle a girl to a certificate of recommendation from the committee. It is hoped to establish this Training School for Servants on a dignified basis, and to make it a place sought after, like the Training School for Nurses. The aim of the committee is to inculcate a right estimate of the dignity of household service, and to win to it a class whose interests would be materially advanced by choosing the family, instead of the shop, as their field of self-support.

Full particulars as to all departments of the Training School may be obtained from the superintendent, 54 E. Eleventh Street. The work is open to the inspection of visitors, and we hope will so commend itself that it shall not fail of liberal support, but be perpetuated and extended.

IMPORTANCE OF MANUAL TRAINING IN PUBLIC SCHOOLS.

From the committee on industries, with its six sub-committees, emanates much of the practical work of the association, and in it originate plans of far-reaching breadth and significance. This committee recognizes as its most important object the introduction of Manual Training as a part of the general system of public instruction. To this end its best and most earnest efforts have been directed, and, while the results are not immediately apparent, the committee remains firm in its convictions, and works with unabated courage to accomplish its aims. After many months of delay the petition of the Association to the Board of Education was finally presented and referred to a special committee, who invited a conference with members of our board. This conference, while revealing the obstacles in the way of the immediate fulfilment of our desires, only served to quicken activity and to encourage faith in the ultimate result. The introduction of manual training has already passed beyond the stage of experiment in neighboring cities, and here the interest of the community, and especially of educators, has been aroused to a marked degree. New York has been slow to move in the direction of this educational advance. Her school system includes an army of more than three thousand teachers, and provides for the education of over one hundred and fifty thousand children. It is well that due caution should be exercised in the introduction of radical changes, but even the most conservative can not long resist the tide of strong popular conviction now sensibly felt in favor of an education which claims for its pupils the cultivation of every faculty as a factor in the development of well-rounded character.

THE MOVEMENT IN NEW JERSEY.

Early last spring a committee was appointed to introduce industrial training in Hoboken. In June a public meeting was held, at which the late General George B. McClellan presided. Members of the Board of Education, city officials, and prominent citizens were present. The result was the formation of the Industrial Education Association of New Jersey. The co-operation of the Board of Education was at once secured, and in November sewing and clay modelling were introduced into four of the public schools of Hoboken by a teacher trained under our auspices. The results are encouraging; the influence is already spreading to neighboring towns, and the Industrial Education Association of New Jersey has entered upon a wide field of usefulness which delights the parent society.

SEWING CLASSES.

During the year a system for the teaching of sewing has been carefully prepared with a view to its use in schools. Two normal classes were thoroughly trained for the work, and we have now sixteen teachers ready to give instruction according to this system. Some of them speedily found engagements in the Saturday morning sewing schools, where good results have followed their teaching. A course of lessons in darning and mending has also been given in two of the well-known private schools in this city. Our teacher is now training a normal class in Hoboken, N. J., and has also given instruction to a class of young ladies, meeting once a week, for the acquirement of the housewifely arts, lessons in domestic economy being alternated with the use of the needle. In the Eleventh Street training school three classes of girls from the public schools have weekly lessons in sewing, and are willing to devote their afternoon hours to the acquirement of this useful art.

A request to start evening classes among the boys at Saint Andrew's Mission was carefully considered by the committee. The boys, learning that an unfavorable conclusion had been reached, promptly drew up a petition urging the establishment of the classes and pledging themselves to regular attendance and diligent effort. Arrangements are now in progress to open these classes, a special fund having been secured for the purpose. Similar opportunities exist in many localities and invite the efforts of our workers.

The collection of information relating to the advisability of introducing industrial training in reformatories and orphanages is recorded, and the conclusion is reached that it would be highly desirable.

VACATION SCHOOLS.

The question of vacation schools is now claiming earnest attention. The experiment so successfully tried last summer in Boston pleads for immediate adoption in our own great city. During the summer months, when the public schools are closed, vast numbers of boys and girls are left with no resort but the streets and no occupation worth the naming. To afford safe scope for the active energies which, for want of other avenues, are directed to mischievous results, is the object of these schools. If the needful funds are secured such schools will be opened this season in one or more localities.

DEMAND FOR INDUSTRIAL TRAINING IN COUNTRY SCHOOLS.

Another problem demands immediate solution. From all parts of the land come requests for practical plans for the introduction of industrial education, not only into school systems, but into villages, mission schools, and among clubs of boys and girls. The need is obvious, and the committee appointed for the purpose hopes soon to offer plans suited to these various circumstances.

Applications for teachers of industrial branches have made it necessary to arrange for their suitable training, and to keep an accurate registry of such as are already qualified.

FREE KINDERGARTENS.

The formation of a committee on kindergartens is among the advance steps taken by the association during the past year. The purpose of this committee is to collect such statistics and information as will promote the establishment of a general system of free kindergartens, and accomplish for the children of New York City a work similar to that done by the Sub-Primary Association of Philadelphia or the kindergartens of Boston and Saint Louis. Believing that in the principles of the kindergarten are laid the foundations of thorough manual training, the association recognizes it as the first step in the ascending scale of industrial education, and gives hearty sanction to the resolution adopted by the National Teachers' Association at Saratoga last summer, which expressed the hope that "the time is near at hand when public sentiment and legislative enactment will incorporate the kindergarten into our public school system." Until then such schools must be sustained by private enterprise.

THE CHILDREN'S INDUSTRIAL EXHIBITION.

As a means of calling attention to the whole subject of industrial education, as well as of ascertaining how far and in what direction the children of New York City and vicinity have been instructed in the manual arts and industries, it was decided to hold a Children's Industrial Exhibition at Cosmopolitan Hall. Circulars inviting the co-operation of schools, institutions, parents, teachers and children were freely distributed. To meet the often-expressed wish that this exhibition might show the results attained in cities where industrial education has already gained a definite place in the curriculum of public instruction, special invitations were extended to New Haven, Conn.; Jamestown, N. Y.; Chicago, Ill.; Cleveland, Ohio; Saint Louis, Mo.; Philadelphia, Pa.; Boston and Worcester, Mass.; and other cities. The work of all grades of pupils, irrespective of age, was solicited, with a view to showing the results possible under systematic training. To the cordial responses from these cities, as well as to the efficient co-operation of schools and institutions in and near New York, we are indebted for the very successful exhibition which has just been held. More than sixty schools and institutions, representing ten large cities and a number of towns and villages, and embracing all grades of manual training, from its first step in the kindergarten to its full development in the manual training school, took part in the exhibition. From beginning to end it was one vast object lesson, demonstrating beyond the possibility of doubt the value of training the hand and the eye as co-equal with the training of the mind.

The exhibition was opened on Tuesday evening, March 30, by an informal social reception to the friends of the association, whose attendance on that occasion gave a strong proof of the interest felt, an interest that only deepened as the days passed on, and each added fresh testimony to the value of the enterprise. No less than seven thousand persons visited the exhibition. This attendance represented no ordinary sight-seeing crowd in search of a new sensation, but rather the thoughtful inspection of men and women whose interest in the educational problems of the day is broad and intelligent. Excursions from neighboring cities brought superintendents, teachers, and pupils from the public schools. Visitors from other lands eagerly embraced this opportunity to gain some insight into American methods, and were surprised at the exhibits.

From the opening of the exhibition to its close the newspapers gave liberal space to its reports, and indicated a public sentiment strongly in favor of its aims. Every day artists from leading periodicals might be seen making sketches to illustrate their notes of the exhibition; and for the whole week the hall became the centre of an influence whose power can not fail to be felt among the educational forces of the day.

IMMEDIATE RESULTS.

What will be the harvest of this seed-sowing it is impossible to estimate. Some results are already apparent, and others may be safely predicted. Schools whose first timid attempts at manual training were here shown are strengthened in their convictions and encouraged to further effort; others, where marked progress has already been made, are stimulated by appreciation of their results and approval of their methods. Some, whose scope has hitherto been limited, have had their attention called to the possibilities within their reach, and have been quick to seize and apply the new ideas. Before the week had closed the association had been asked to train teachers for four institutions who saw the need of wider effort and more skilful teaching. Committees formed in outlying towns and villages to aid this exhibition may naturally form the nucleus of small associations to promote industrial training. Already we are in receipt of many letters bearing testimony to the value of the exhibition; and from the very cities contributing most largely to the success of the enterprise comes the assurance of reflex good in their own schools. A permanent museum of articles illustrating the range and methods of industrial education is also projected as one very tangible result of this children's exhibition. * * *

A NEW HOME FOR THE ASSOCIATION.

On the 1st of May, 1885, the association took possession of an office at 21 University Place, and since that date hundreds of people from all parts of the country have come to the rooms. Strangers to be directed to the industrial schools in New York City; workers seeking information as to methods of industrial education suited to their special fields; school superintendents to be put into communication with others who have already been successful in the introduction of manual training; newspaper reporters and students investigating the sources of information as to this new phase of education, are among the visitors. To each we offer the best results of our own experience, and the best we have yet been able to gather from the experience of others. More and more the association is becoming a bureau of information; more and more, through a large correspondence and through personal interviews, it is establishing relations with the best educational interests of the country.

As yet we are but feeling our way a step at a time. The work to which we have set our hands is gigantic in its proportions, and will not be accomplished in a day or a year, but it is work well worth the doing. It points towards the solution of some of the social and political problems that agitate our land. It touches the very roots of our civilization, and supplies the springs from whence the prosperity of the nation will be nourished in future generations.

For the board of managers.

JANE P. CATTELL,
General Secretary.

APRIL 13, 1886.

The following official act of incorporation of the new society is given in the catalogue of this year:

CERTIFICATE OF INCORPORATION OF THE INDUSTRIAL EDUCATION ASSOCIATION.

We, Grace H. Dodge, John S. Bussing, James W. Pinchot, Marie Louise Irving, William A. Potter, Mary E. Turnure, S. Edwina Brown, Charles E. Merrill, being persons of full age, citizens of the United States, a majority of whom are citizens of, and residents within the State of New York, desiring to form an association pursuant to the provisions of chapter three hundred and nineteen of the Laws of Eighteen Hundred and Forty-eight, entitled "An act for the incorporation of benevolent, charitable, scientific, and missionary societies," and of the several acts extending and amending the same, do hereby certify:

I. That the corporate name of the said society is "The Industrial Education Association."

II. That the objects for which said society is formed are:

(1) To secure the introduction of manual training as an important factor in general education, and to promote the training of both sexes in such industries as shall enable those trained to become self-supporting.

(2) To devise methods and systems of industrial training, and to put them into operation in schools and institutions of all grades.

(3) To provide and train teachers for this work, and to make use of all such means as may conduce to the accomplishment of the above objects as a work of practical benevolence and charity.

III. That the number of managers who shall manage the concerns of the said society shall be fifteen.

IV. That the names of the managers for the first year, and their residences, are as follows:

General Alexander S. Webb, 15 Lexington Avenue, New York City; Miss Grace H. Dodge, 262 Madison Avenue, New York City; Mr. John S. Bussing, 26 East Tenth Street, New York City; Miss S. Edwina Brown, Murray Hill Hotel, New York City; Mrs. John S. Paddock, Brick Church, New Jersey; Mrs. William T. Blodgett, Mrs. Theodore Bronson, Mrs. George Walton Green, Mrs. David M. Turnure, Mr. J. W. Pinchot, Mr. William A. Potter, Mr. William F. Bridge, Mrs. Theodore Irving, Mr. Charles E. Merrill, Mr. N. A. Prentiss.

V. That a majority of such managers are citizens and residents of the State of New York.

In witness whereof, we have hereunto set our hands this eighteenth day of February, one thousand eight hundred and eighty-six.

GRACE H. DODGE. WILLIAM A. POTTER.
JOHN S. BUSSING. MARY E. TURNURE,
JAMES W. PINCHOT. S. EDWINA BROWN.
MARIE LOUISE IRVING. CHARLES E. MERRILL.

STATE OF NEW YORK,
County of New York, ss:

On this eighteenth day of March, eighteen hundred and eighty-six, before me personally appeared Grace H. Dodge, John S. Bussing, James W. Pinchot, Marie Louise Irving, William A. Potter, Mary E. Turnure, S. Edwina Brown, and Charles E. Merrill, to me known to be the individuals described in and who executed the foregoing certificate, and they severally, before me, signed the said certificate and acknowledged that they executed the same.

WM. S. GUERINEAU,
Notary Public, Kings County.

Certificate filed in New York County.

The changes in the by-laws designating the duties of the newly-appointed committees are as follows:

XIII. STANDING COMMITTEES.

There shall be seven or more standing committees, as follows:

(*a*) Committee on finance.
(*b*) Committee on books and printing.
(*c*) Committee on industries.
(*d*) Committee on kindergartens.
(*e*) Committee on industries for reformatories, orphanages, and asylums.
(*f*) Committee on industries for the insane.
(*g*) Committee on houses and training for domestic service.

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XVII. COMMITTEE ON KINDERGARTENS.

It shall be the duty of the committee on kindergartens to gather information relating to the system, and to devise ways and means for introducing kindergartens where possible.

XVIII. COMMITTEE ON INDUSTRIES FOR REFORMATORIES, ORPHANAGES, AND ASYLUMS.

It shall be the duty of the committee on industries for reformatories, orphanages, and asylums to collect information, to promote interest in industrial education, and to introduce, with co-operation of the authorities, industrial training into such institutions.

XIX. COMMITTEE ON INDUSTRIES FOR THE INSANE.

It shall be the duty of the committee on industries for the insane to collect information in regard to industries for the insane, and to promote the introduction of such industries wherever practicable.

XX. COMMITTEE ON HOUSES AND TRAINING FOR DOMESTIC SERVICE.

It shall be the duty of the committee on houses and training for domestic service to care for any houses, offices, and rooms used by the association, and to train in all branches of domestic service.

The treasurer's report for the year ending March 31, 1886, records the receipt of $7,892.90, with a balance of $645.20 after paying all expenses.

INDUSTRIAL EDUCATION ASSOCIATION.

[No. 21 University Place, New York.]

OFFICERS, 1886–'87.—General Alexander S. Webb, President; Miss Grace H. Dodge, Vice-President; Mr. John S. Bussing, Treasurer; Miss S. Edwina Brown, Assistant Treasurer; Miss Jane P. Cattell, Secretary; Miss Mary M. Butler, Librarian.

BOARD OF MANAGERS, 1886–'87.—General Alexander S. Webb, Miss Grace H. Dodge, Mr. John S. Bussing, Miss S. Edwina Brown, Mrs. William T. Blodgett, Mr. William F. Bridge, Mr. D. Dwight Collier, Mrs. P. M. Bryson, Miss Mary M. Butler, Mr. George Walton Green, Mrs. Theodore Irving, Mr. William A. Potter, Mr. N. A. Prentiss, Mr. Charles E. Merrill, Mrs. Egbert Guernsey.

Office, 21 University Place. Miss Jane P. Cattell, General Secretary.

Training School, 54 East Eleventh Street. Miss H. R. Burns, Superintendent.

STANDING COMMITTEES.

On Finance.—Mr. William F. Bridge, Chairman; Mr. William B. Fitts, Secretary; Mrs. Franklin Allen, Miss S. Edwina Brown, Mr. John S. Bussing, Miss Grace H. Dodge, Mr. N. A. Prentiss, Mrs. Andrew J. Rickoff, Mrs. William A. Street, Mrs. David M. Turnure.

On Books and Printing.—Miss Mary M. Butler, Chairman; Miss M. C. Uhl, Secretary; Miss May Ewing, Mr. Hamilton Mabie, Mr. William A. Whitlock.

On Industries.—Mr. William A. Potter, Chairman; Miss Katherine Van Nest, Secretary.

Sub-committee on Household Industries.—Miss S. Edwina Brown, Chairman; Miss Mary Agnew, Mrs. John S. Bussing, Miss Coddington, Mrs. Clark J. Cort, Miss Chittenden, Mrs. Demarest, Mrs. E. W. Denny, Mrs. H. D. Hull, Miss C. T. Lawrence, Miss Rosalie Rapallo, Mrs. R. C. Shannon, Miss M. A. Stockwell, Miss Van Nest.

Sub-committee on Industrial Arts.—Mrs. William A. Street, Chairman; Mrs. A. A. Evstaphieve, Mrs. Andrew J. Rickoff, Miss M. H. Trotter, Miss Adele Turnure, Miss M. C. Uhl.

Sub-committee on Mechanical Industries.—Mr. William B. Fitts, Chairman; Mr. Henry M. Leipziger, Mr. Joseph T. Bedford.

Sub-committee on Outside Organizations.—Mr. William A. Potter, Chairman: Mr. Charles Barnard, Miss Grace H. Dodge, Mr. Elliot McCormick, Mr. William F. Bridge.

Sub-committee on Bureau of Teachers.—Mrs. John S. Bussing, Chairman; Miss Mary Agnew, Miss S. Edwina Brown, Miss Van Nest.

Sub-committee on Vacation Schools.—Miss Grace H. Dodge, Chairman; Mrs. P. M. Bryson, Mr. William B. Fitts, Mr. Elliot McCormick, Mrs. John S. Bussing.

Special committee in Yonkers.—Mrs. Andrew J. Rickoff, Chairman; Miss Mary M. Butler, Miss May Ewing.

Special committee in Brooklyn.—Mrs. Franklin Allen, Chairman; Mrs. J. A. Hewlett, Mrs. C. W. Ide.

On Kindergartens.—Mr. N. A. Prentiss, Chairman; Miss Marquand, Secretary; Mr. Charles Barnard, Mrs. Joseph H. Choate, Miss Cooper, Miss M. A. Cooper, Miss I. E. Folsom, Mrs. Abram S. Hewitt, Miss Augusta Larned, Mrs. Courtlandt Palmer, Mrs. N. A. Prentiss.

On Industries for the Insane.—Mrs. Egbert Guernsey, Chairman; Mrs. Evstaphieve, Secretary; Miss Howe, Mrs. Theodore Irving.

On Reformatories, Orphanages, and Asylums.—Mr. Chas. E. Merrill, Chairman; Mrs. John R. Paddock, Secretary; Mrs. W. C. Banning, Mr. Frederick G. Burnham, Mr. M. Dwight Collier, Miss J. N. Demarest, Mrs. D. M. Everit, Mr. Geo. Walton Green, Mrs. C. M. Parker.

On Houses and Training for Domestic Service.—Mrs. P. M. Bryson, Chairman; Mrs. E. W. Denny, Secretary; Mr. Wm. F. Bridge, Miss S. Edwina Brown, Mrs. Horace H. Chittenden, Miss Julia Cooper, Mrs. A. C. Clark, Miss C. T. Lawrence, Mrs. Joseph W. Patterson, Miss H. H. Robbins, Mrs. David M. Turnure.

THE CHILDREN'S INDUSTRIAL EXHIBITION.*

Frequent references have already been made in the preceding pages to this notable exhibition, held in New York, in April, 1886, the catalogue of which fills 88 closely-printed pages. There is no doubt that, by the notice which was attracted to it, by means of the accounts and comments which appeared in all the leading journals of the city, as well as by its direct influence upon the throngs of visitors, this undertaking exerted a positive and wide-spread influence in awakening increased interest in the subject of industrial training, not only in New York City and the immediate vicinity, but throughout the country. This was largely owing also to the fact that so many widely-separated communities were already interested in the success of the exhibition by reason of having sent to it displays of the work done in their schools.

This public showing of what had been done in introducing industrial training in the public schools of other cities could hardly fail of impressing the public school authorities of the city of New York both with the importance and the practicability of giving such instruction in the schools.

The comprehensive character of this exhibition, as a whole, may be realized from its showing of the two extremes of industrial training, in the collections there presented, of the work of the kindergarten on the one hand, and, on the other, of the articles made by the boys in the manual training classes attached to the College of the City of New York, in which college a course of industrial instruction is given, extending through three of the four years of the college course. Thus, this exhibition set forth the work of the tiny fingers of the little ones side by side with that of the trained collegians.

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* Catalogue Children's Industrial Exhibition, under the auspices of the Industrial Education Association, March 31 to April 6, 1886, Cosmopolitan Hall, Broadway and Forty-first Street, New York City. Pp. 88.

The connecting links of this chain were not wanting, since specimens of the work of children of all ages and of the pupils of all classes of schools were also shown.

The ages of the children when given, as they were in many instances, ranged between the limits of five and sixteen years. A very large number were ten years of age and under; of the remainder, the larger number were between twelve and sixteen years of age.

The list of articles shown by each school or institution, is preceded by a short account of the school and of its methods. That introducing the exhibit of the sewing and of the housework department of the Wilson Industrial School for Girls, is as follows:

II. WILSON INDUSTRIAL SCHOOL FOR GIRLS.

[125 St. Mark's Place, New York City.]

First directress, Mrs. Jonathan Sturges, 40 East Thirty-sixth Street.

The Wilson Industrial School for Girls, now in its thirty-third year, was the first of its class established in New York City. From very small beginnings it has developed many educational problems year by year, and has so enlarged its work and influence, that it now embraces, in addition to the day school, an organized church and Sunday school, a weekly meeting for mothers, a circulating library, and classes in various domestic industries. The kitchen garden originated here. The elements of cooking were first taught to children here, and the books on these subjects, as well as on sewing, have been called for in the cities of Europe, as well as those of our own West. The sewing boxes, and primers, and the kitchen garden books have been ordered by the Government schools of Alaska, and have also been sent to the mission schools of India, China and Japan.

The Wilson school is referred to from all parts of the world as a pioneer in industrial work, and letters are constantly received asking about the methods of the many different branches of work here in progress.

I have space but for three other extracts; one showing that, although no industrial training other than in drawing had yet been given in the public schools of New York City, a few pupils were greatly interested in "making things;" the second, showing that, in a far inland town in Chautauqua County, N. Y., training in various kinds of industrial work, suitable both for boys and girls, had been successfully introduced in the schools; the third, to show that the "Farm Garden" methods have been practically tested and approved.

XXXVIII. EXHIBIT BY AMATEUR TECHNICAL UNION.

[Members, pupils in second grade of G. S. 57, East One Hundred and Fifteenth Street, New York.]

President, Everett L. Thompson; vice-president, Winfred C. Rhoades; secretary, John B. Cartwright.

Object of Amateur Union.—The making of simple mechanical apparatus to illustrate instructive experiments in philosophy, chemistry, etc., mechanical drawing, map drawing in water-colors, etc. The models exhibited show some of the work done during the past six months; they were planned after class hours and made at home by the members, and at meetings improvements were suggested by their instructor, J. Abdon Donnegan.

No.	Age.	Exhibitors.	Apparatus.
1	14	David W. Benediot	Miniature guillotine.
2	14	Paul C. Hunter	Fresh-water aquarium.
3	15	George H. Chase	Foundry crane.
4	15	......do	Plan of a stone-cutter.
5	14	Everett L. Thompson	Inclined railroad.
6	14	......do	Dumb-waiter.
7	14	Henry Stœcker	Diminutive pile-driver.
8	14	......do	Stone derrick.
9	14	......do	Wooden press.
10	15	Owen J. McCue	A windlass.
11	14	John B. Cartwright	Water pump.
12	13	Winfred C. Rhoades	Alcohol furnace.
13	13	Theodore Baron	Electric arc lamp.
14	14	Christopher Binzen	Inertia model.
15	15	William J. Mulcahy	Fret-work.
16	14	Harry Henshel	Map of world.
17	15	Frank Hovey	Do.
18	14	Harry Rothschild,	Map of United States.
19	13	Theodore Baron	Do.
20	13	Winfred C. Rhoades	Oil painting, "Italian Fisher Boy."
21	13	......do	Crayon Drawing, "Norman Sire" (after Rosa Bonheur).
22	13	George C. Atting	Map drawing.
23	12	George Scholze	Do.
24	14	Christopher Binzen	Do.

L. THE JAMESTOWN PUBLIC SCHOOLS.

Known as the Jamestown Union School and Collegiate Institute, at Jamestown, Chautauqua County, N. Y. Superintendent, Samuel G. Love, 409 *Prendergast avenue, Jamestown, N. Y. Ages, from five to eighteen years.*

The accompanying programme gives in brief the industries taught in the Jamestown schools, to which have been added, during the past two years, type-writing, short-hand and microscopy. The methods of industrial training, it may be stated in general, are the same as those employed in teaching other subjects—that is, by direction, instruction, and repeated effort by the learner.

For the Primary Departments.—Block building, stringing straws, stringing beads, learning colors, tablet laying, paper folding, stick laying, picture cutting, scrap-book making, spool work, paper embroidery, braiding, perforated card-board embroidery, slat plaiting, mat weaving.

For the Second Departments.—Slat plaiting advanced, crocheting chain stitch, paper folding advanced, review work, perforated card-board embroidery advanced, review work, sewing over and over, crocheting, paper folding and mounting, hemming, pease work, knitting.

For the Girls of the Grammar and High Schools.—Hemming, sewing over and over; stitching, overcasting, running and gathering; patching, darning and making button-holes; knitting plain, seamed, fancy stitches; crocheting chain, plain, double, and afghan stitches and fancy stitches; cutting patterns for undergarments, cutting bias and by a thread, enlarging patterns; cutting and fitting an underwaist, cutting and basting; embroidery on canvas with worsted, tying fringe, and drawn work on linen with feather stitches, satin stitches, Kensington, raised work. Cooking: Bread—Graham, brown, white, Indian; biscuit, various kinds; cake, four kinds; roast beef, beefsteak broiled; soups of various kinds; ways of cooking cheap pieces of beef to make them palatable and nourishing, etc.

Printing Office (for boys and girls).—They learn: (1) The case; (2) type-setting; (3) to distribute the type; (4) forms of newspaper work; (5) press work; (6) job work, different grades; (7) general office work.

For Boys of the Grammar and High Schools.—Well-graded course of twenty-one lessons in carpentry.

The articles shown were made by eighty-three pupils—forty-eight girls and thirty-five boys, whose ages ranged from five to sixteen years. Specimens were shown of work in schools of all grades—kindergarten work, sewing, knitting, crocheting, industrial drawing, carpentry, cabinet-work, and printing.

LV. THE FARM GARDEN—MINIATURE GARDEN AND FARMING IMPLEMENTS.

[Originator, Mrs. L. B. Briant.]

The idea of preparing a course of simple lessons in agriculture was suggested by the Kitchen Garden, and the desire arose to do something similar in design and spirit for the boys. With the approval and encouragement of Mr. C. L. Brace, secretary of the Children's Aid Society, lessons, with miniature tools and a box of earth suitable in size for the school-room, were introduced into one of the schools of that society. The experience of five years has proved the feasibility of the plan.

The exhibition catalogue was prefaced by the following statement by the committee in charge of the exhibition, showing its purpose and methods:

CHILDREN'S INDUSTRIAL EXHIBITION.

Committee on Management.—Mr. Charles Barnard, Mr. William F. Bridge, Mr. John S. Bussing, Miss Grace H. Dodge, Mr. William A. Potter, Mrs. A. J. Rickoff, Mrs. William A. Street, Mr. E. A. Spring.

This exhibition was planned to ascertain how far and in what direction the children of New York City and vicinity have been instructed in the manual arts and industries. Circulars were issued inviting the co-operation of schools, institutions, parents, and children, to which cordial responses were received. Although many teachers regretted that they could send no exhibits because no industrial training was given in their schools, the general sentiment was strongly in favor of introducing such training.

To meet the often-expressed wish that this exhibition might show the results attained in cities where industrial education has already gained a definite place in the curriculum of public instruction, special invitations were extended to Jamestown, N. Y.; New Haven, Conn.; Chicago, Ill.; Cleveland, Ohio; Saint Louis, Mo.; Philadelphia, Pa., and other cities. From these well-known schools the association invited the work of all grades of pupils, irrespective of age, with a view to showing the results possible under systematic training.

The thanks of the association are due to these cities and to all the schools and institutions which have so cordially co-operated in making the exhibition what it is.

Some disappointment is felt that the number of individual exhibits is not larger, but the fact is a most eloquent plea for a more general interest in the cultivation of the manual arts.

The exhibition is placed before the public in the earnest hope that even the crude efforts of untrained little hands may awaken a thoughtful interest in their future development, while the more finished work of older pupils may convince all who see it that manual training is both feasible and advisable as a factor in public education.

The annual meeting of the Industrial Education Association will be held in Association Hall, Fourth Avenue and Twenty-third Street, on Tuesday evening, April 13, at 8 p. m. Speakers from other cities will be present to tell how manual training has been successfully introduced into the curriculums of public instruction, and the annual report of the Association will be presented.

JURIES TO AWARD MEDALS.

Wood-work: Mr. Lockwood De Forest, Mrs. Joseph H. Choate.
Metal work: Mr. Henry T. Blodgett, of Conover & Co.
Needle-work: Mrs. Morris K. Jessup, Mrs. Theodore Cuyler, Miss M. A. Cooper.
Practical cookery: Miss Emily Huntington.
Modelling in clay: Mr. Augustus Saint Gaudens, Mrs. Vincenzo Botta.
Leather work: Mr. Charles R. Yandell.
Designs: Mr. F. W. Cheney, Mr. A. Chambellan, of W. and J. Sloane.
Printing: Mr. A. B. Turnure.
Miscellaneous exhibits: Mrs. W. S. Hoyt, Mrs. Robert Hoe, Jr.

First prize: For best examples of ornamental wood-work, mechanical wood-work, designs, ornamental metal work, mechanical metal work, ornamental needle-work, plain needle-work, modelling in clay, cooking, leather work, printing.

Second prize: For especially meritorious specimens of cabinet-work, carving, carpentering, turning, scroll sawing, models, toys, repoussé work, forge work, other metal work, embroidery, lace-work, plain sewing, knitting and crocheting, mending and darning, dolls' dress-making, bread, rolls or biscuit, reproduction from nature in clay, reproduction from drawing in clay, design for carpet or oil-cloth, design for wall-paper, design for embroidery, design for pottery or tiles, leather work, printing.

Third prize: For the two second-best specimens under each of the above classes, and for best specimens under head of miscellaneous exhibits.

Fourth prize: For the three third-best specimens under each of the above classes.

Sales—As announced in the circulars, articles made by children for the exhibition may be sold. All sales are in charge of a regular saleswoman, and must be made through her. A commission of 10 per cent. will be deducted from price received, and settlement will be made within ten days of the close of the exhibition.

The following report by the committee appears as Appendix "A," in the Second Annual Report (1886) of the Association.

APPENDIX A.

REPORT OF THE COMMITTEE ON INDUSTRIES ON THE EXHIBITION OF CHILDREN'S HANDIWORK.

To the Board of Managers, Industrial Education Association:

When the idea of holding an exhibition of children's handiwork was first suggested in the committee on industries, the object in view was to ascertain how far and in what directions the children of New York and its vicinity were being instructed in the manual arts and industries. In sending out the circulars of invitation it was determined to limit them to New York and a radius of thirty miles from the City Hall, and it was also decided not to invite children over fifteen years of age to contribute. With these restrictions thirteen thousand circulars were sent out, two hundred being sent directly to the editors of newspapers, requesting them to call the attention of the public to the enterprise. Later it was decided to extend the limit of age, and to request public and private schools, as well as other institutions of other cities, to send exhibits; which requests were in all instances cordially complied with. The character of the exhibition, therefore, was materially changed from that which the committee had at first intended it should assume, and while regretting that New York could not, or at least did not, furnish a sufficient number of exhibits to make a local exhibition possible, the change in the action of the committee, necessitated by this fact, resulted in an exhibition of very much greater educational value than the other could have possessed.

The exhibition was held at Cosmopolitan Hall; it opened on the 31st of March, and was in progress for one week. It comprised no less than seventy separate exhibits from schools and institutions, representing the work of thousands of children, and one hundred and forty individual exhibits. Many of the exhibits from the public schools of other cities were more or less alike, but those sent from private institutions varied from work of the simplest character to so complex an exhibit as the model of a suspension bridge. Of these seventy exhibits, fifty-four were from New York and its vicinity; the remainder included the public schools and institutions of Philadelphia, New Haven, Boston, Worcester, Chicago, Cleveland, Saint Louis, Chautauqua, and Jamestown, and the Indian School of Carlisle, Pa., together with three exhibits of foreign work.

It is suggestive to note that, of the fifty-four exhibits of New York and its vicinity, only two represented public schools—those of Hoboken and Montclair, N. J. It is further suggestive to note that, of the remaining fifty-two exhibits, thirty-one were from institutions of a strictly charitable character,

Some of these teach the children under their care nearly all the studies of the regular school course; but they go further than this, they aim to prepare their children to make the best possible use of their lives when they go out into the world. To provide children with the best weapons wherewith to fight life's battles, something more than mere book learning is necessary. Is there not a lesson here which can be applied to the larger education of the masses? Are the future lives of these children likely to be different from those of a majority of our public-school children? It would seem not.

There were besides these charitable institutions, which made so large and so interesting a part of the exhibition, others of a purely private character, among which the Gramercy Park School Tool House Association, the Hebrew Technical Institute, and the Amateur Technical Union, are particularly worthy of mention as showing the results of technical instruction on children of widely different conditions of life. The exhibits of these institutions show most clearly that, whether a child is reared in the midst of plenty or in the midst of poverty, the same capabilities exist. The highest awards which the association had to bestow were given to exhibits from these schools. Is not this evidence of the wide applicability of industrial training? The practicability of introducing this sort of instruction into public-school systems was very clearly shown by the splendid exhibit of the Philadelphia public schools, where the experiment has been fully tried and with entire success. To the testimony of Philadelphia was added that of New Haven, Chicago, Boston and Worcester. It seems like stating an axiom to say that all girls ought to be taught to sew, and yet this opinion is not held by all teachers. That such instruction can be successfully engrafted on every public-school curriculum was shown by the sewing exhibit of the Philadelphia public schools.

The excellence of a large number of the exhibits was surprising even to the most enthusiastic believer in technical instruction, and those who had only a vague belief in the abstract proposition saw in the exhibition the practical demonstration of it. Man has been given no pleasure comparable to that of creation—the power to make, to originate—and the child is in this respect like the man. There was abundant evidence of this in the exhibition, and it was sad to think all or nearly all the children in our midst suffer in not being taught to do something. Who can gauge the influence of these idle and unoccupied hours on the moral character of the child? If the exhibition showed anything, it was that the children were interested in and really loved the work they were doing, and that, with the wide spreading of industrial training, the illogical, irrational objection to working with one's hands, the result of ignorance of, and want of familiarity with work must vanish. It would seem to your committee that nothing could have been devised which would so increase the popular appreciation of the importance of industrial and manual training as this exhibition. Mere theorizing on any subject may or may not make converts to it, but a practical demonstration, such as this, could not fail to win disciples in all who saw it.

The attendance was large and appreciative, numbering about seven thousand visitors. Prizes were awarded as follows: Nine first-class medals for best specimens of the leading classes of work represented; twenty-five second-class medals; forty-nine third-class medals; and eighty-six fourth-class medals; a total of one hundred and sixty-nine.

The financial result showed the total expenses, $2,488.53, entirely covered by receipts from admissions, and donations specially secured as a guarantee fund.

The public press at large, not only in its reports, but in its editorial columns, recognized the importance of the work which the association hopes to do, and was clearly alive, not only to the character of the exhibition, but to the lessons which might be drawn from it.

Two pages follow, filled with extracts from the appreciative and commendatory notices which appeared in several of the leading New York journals during the progress of the exhibition. The report is signed:

For the committee on industries.

WM. A. POTTER,
Chairman.

The Third Annual Report.*

That part of this report, which recounts the work of the year ending March 31, 1887, is here given entire.

Third Annual Report of the Industrial Education Association.

In presenting this the Third Annual Report of the work done by the association the board of trustees can not refrain from offering its congratulations to the association for the rapid growth both in its work and in its influence during the past twelve months.

No. 9 University Place.

It became plainly evident shortly after the last annual report was issued that the offices and house which the association had leased for its work had become quite inadequate. Steps were being taken to collect the material for a museum of industrial and technical education from contributors to the children's exhibition, and a place for the promised collection, must be found. The classes assembled in the house No. 54 East Eleventh street had grown too large for the rooms in which they were held, and it was clear that to demonstrate the practicability of engrafting the system advanced by the association on the present system of general education, larger classes must be gathered together than had heretofore been possible with the limited space at the command of the association. These reasons led the board of trustees to consider the propriety of securing a suitable building for the offices and class work of the association. Early in May the building, No. 9 University Place, previously occupied by the Union Theological Seminary, was brought to the notice of the board, and examined to ascertain how well adapted it might be for the proposed occupancy of the association. It was found to contain large, well-lighted class rooms, a pleasant hall, and a room which had been the library, and which was admirably adapted for the proposed museum. A building better suited to the work of the association, provided certain slight alterations and repairs were made, it was thought could not be found; and on the 20th of May the board of trustees appointed a committee to consult with the trustees of the seminary, with a view to renting the building. The latter agreed to make the desired alterations and repairs and to lease the building for a term of eight years at an annual rental of six thousand dollars. This offer the board of trustees accepted, and the necessary work was at once commenced. Early in October the building was ready for occupancy. During the summer the question of equipment had been discussed, and through the liberality of members of the board of trustees and others interested the funds necessary to thoroughly equip the building were given.

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*Third Annual Report of the Industrial Education Association, with Prospectus of the proposed Training College. April, 1887. No. 9 University Place, New York City. Pp. 22."

CLASSES.

Upon moving into the new building, the work which had been going on at the Eleventh street house was transferred hither; and on December 14, the day of the formal opening, there were two classes in drawing, one in carpentry, one in sewing, one in cookery, together with the kindergarten and the department of domestic training. To-day, there are in the building seven classes in drawing, six classes in carpentry, six classes in sewing, twelve classes in cookery, together with the kindergarten and an increased number of young women in the domestic training department. The total number of pupils that had come under the instruction of the association during last year was 1,904. To-day the number has increased to 4,383, of which number 2,991 pupils have been in classes outside of the building but instructed by teachers in the employ of the association. The registry of classes held in the building shows an enrolment of 992 pupils, and 400 children were taught during the summer in the vacation schools. Of the 992 pupils under instruction in the building, 65 have been teachers.

These figures show how great the growth in the number of pupils has been; and as the number has increased, so, correspondingly, has the quality of the instruction improved. While the practical departments, like the cooking school, the sewing room and the carpenter's shop, from their novelty, attract the largest number of applicants, the association endeavors to emphasize the value of drawing, and insists upon the ability to sketch an object readily, to make working drawings with exactitude, and to lay out a plan, as preliminary to all the practical work. Without this ability, the practical exercises in the wood-working, the cooking, and sewing departments have not full educational value.

Twenty-five teachers are, or have been, holding classes under the auspices of the association in different parts of the city—at Yonkers, Dobb's Ferry, Staten Island, Hoboken, Ogontz Seminary, Rochester, Cleveland, and elsewhere—and, through the instrumentality of the association, industrial drawing, clay-modelling, wood-carving, carpentry and sewing have been introduced into the public schools of Hoboken and Staten Island with a fair degree of success.

VACATION SCHOOLS.

During the summer, vacation work was undertaken in the tenement districts of the city, at Staten Island and Oyster Bay.. While a vacation school is too short-lived to afford valuable educational results, the benefit is obvious of substituting healthful and interesting occupation for the demoralizing influences to which the children of the poor are subjected during the long vacation. It must be remembered that in these schools the attendance is not compulsory, and the discipline of the ordinary school impossible. Something finer is reached where boys and girls submit cheerfully to necessary restraint for the sake of the interest which the work inspires. In the three schools held in the city in July and August, over four hundred pupils were instructed in drawing, modelling, construction, wood-carving, sewing and cooking.

All the class work has been under the immediate supervision of the superintendent, Miss H. R. Burns, upon whose connection with the association the board of trustees has every reason to congratulate itself.

COMMITTEES.

At the Board meeting held on the 21st of October the general conduct of the work of the Association was placed in the hands of an executive committee, which took the place of the various committees of last year. By this centralization of authority, the ease and celerity with which the work could be accomplished has been greatly increased.

At present, the standing committees are as follows: Finance committee, executive committee, and auditing committee.

LECTURES.

At the same meeting of the Board of Trustees it was determined to initiate a course of free lectures on the subject of industrial education and kindred topics. The opening lecture of the course was given by President Gilman, of Johns Hopkins University, Baltimore. The other lectures were by Samuel T. Dutton, Superintendent of public schools, New Haven, Conn.; Thomas W. Balliet, Superintendent of public schools, Reading, Pa.; Norman C. Calkins, Assistant Superintendent of public schools, New York City; Dr. Henry H. Belfield, Director of the Chicago Manual Training School; William N. Barringer, Superintendent of public schools in Newark, N. J.; Col. Francis W. Parker, of the Cook County Normal School, Illinois, and Dr. Nicholas Murray Butler, President of the Association. It will be seen from this list that the subject has been presented by some of the best known authorities on educational subjects in this country.

MUSEUM.

Of the value of a museum illustrating such methods of manual training and industrial education as have been well tried there can be little doubt and such a collection as that which has been formed by the association is probably unique. There is, in such an exhibition, a veritable object lesson in industrial education which he who runs may read. From it the eye takes in at a glance the possibilities resulting from the combination of manual and mental exercises—how they supplement and depend upon each other.

The museum comprises at present some twelve separate exhibits of drawing, together with specimens of carpentry, joinery, lathe and forge work, representing the Chicago public schools, Worcester High School, Montclair public schools, New Haven public schools, Hebrew Technical Institute, College of City of New York, Baltimore Manual Training School, Chicago Manual Training School and the Woman's Institute of Technical Design. Still other exhibits are in course of preparation.

LIBRARY.

It has always been felt that the library was by no means such a one as the association ought to possess. In the machinery of education, a library should play an important part. There is much more literature upon the subject, to which students should have access, than is comprehended in the five hundred books and pamphlets now on the shelves of the association, and it is gratifying to state that a member of the board of trustees has undertaken to put the library in a condition worthy of the association. A sum sufficient has been given to enable the board of trustees to purchase not only the standard English works, but to have translations made and issued under the auspices of the association of many foreign works, which should be put before students and the public. When this is accomplished—and it will take time—the association will be in possession of the nucleus of a most valuable reference and circulating library.

STATEMENT OF PRINCIPLES.

At the meeting of the Board of Trustees on the 17th of December a fear was expressed that in the interest for the work at the new building the association might lose sight of its wider policy—which was the creation of public interest and belief in the value of industrial education. There was danger of its degenerating into a manual training school. To guard against this a committee was appointed to outline the policy of the association; and the report of that committee, which follows, has been called, not inaptly, the articles of faith of the Association.

The Association holds:

I. That the complete development of all the faculties can be reached only through a system of education which combines the training found in the usual course of study with the elements of manual training.

II. That the current system trains the memory too largely, the reasoning powers less, the eye and hand too little.

III. That industrial training, to have its fullest value, must be an integral part of general education. While valuable in some measure alone, it is alone little better than manual training as leading to the learning of trades.

IV. That it is not the aim of the Association to teach trades. That boys and girls will, if educated according to the system which it advocates, be better able to take up the study of any particular trade, it recognizes as one of the results of the system. It is the development of all the faculties which it holds to be the essential aim of the system.

V. That the fact is generally recognized among those best informed on the subject of education, that the kindergarten system produces the best results with young children. The Association claims that the system which combines industrial training with the usual and necessary branches is nothing more than a development of the kindergarten theory; a system found wise for young children, modified and adapted to children of more mature growth.

VI. That as children, wherever found, possess the same faculties and develop the same characteristics, this system should be introduced into all classes and grades of schools, the private as well as the public, and not alone in the primary public schools, but in all those of more advanced grades.

VII. That this system tends to the development of certain moral qualities as well as to the development of the intellectual faculties.

VIII. That the various occupations which are by this system given to children render study less irksome than any system can in which the exercise of the faculty of memory is alone involved.

IX. That there exists in this country a wide-spread disinclination for manual labor which the present system of education seems powerless to overcome. There is a wide range of occupations which boys and girls might with advantage enter were it not that they are prevented from so doing by a false view of the dignity of labor. The Association holds that one of the results of this system of education will be to destroy a prejudice which in a measure arises from a want of familiarity with hand work.

X. That the first and last object of the Association, the main reason for its existence, is the creation of a public interest in this system and a public belief in its value.

TRAINING OF TEACHERS.

During the winter it became apparent that, while the Association was meeting with no small success in its efforts to spread abroad the principles which it advocates, it was, at the same time, creating a demand for trained teachers, to meet which there was an inadequate supply. The question arose, where and by whom were these teachers to be trained. Manifestly, this training should and must be done by the Association. Here was a wide field for work; and the board of trustees, recognizing its duty, proceeded to organize such normal classes as its facilities permitted it to undertake.

This was no sooner done than it became evident that such a scheme must assume the proportions of a training college, needing the guidance of a trained and expert educator. A president must be found, and search was at once begun for the right man for the place. And this man the Board of Trustees believes it has found in the person of Dr. Nicholas Murray Butler, the president-elect. To his care the organization and guidance of the proposed training college will be given.

The interest of the public during the year has been shown by the large number of visitors who have come to the building, not only from among the people of New York, but from many other cities. The lectures have been well attended, and visitors and listeners alike have shown an intelligent interest and appreciation. Thus it will be seen that the building remains, as it always must, a centre of information—a headquarters for influence and work.

It is intended to organize a model school in connection with the proposed training college. In fact, a college aiming to train teachers could not exist without such a school in connection with it. It is a necessary concomitant.

In this model school the training which the Association advocates will be given; here the new system, which combines the old and the new, will be taught; and the Association hopes to have in it a strong confirmation of the belief which it strives to propagate.

From this brief account of what has been done in the past year it must be evident to every one that the Association has gone forward in its work with giant strides; and, if the past is any guaranty of the future, it may be contemplated with entire and assured confidence.

WILLIAM A. POTTER,
Secretary.

The following is the Treasurer's account, which emphasizes the wonderful growth in the resources of the Association, which have more than kept pace with the great increase in expenditures:

Industrial Education Association in account with John S. Bussing, Treasurer.

Dr.			Cr.		
1886.			1887.		
Apr. 1.	Cash on hand	$645.26	Mar. 31.	Vacation schools	$615.92
	Loan to children's exhibition committee returned	1,036.25		Rent account	4,278.18
	Annual subscriptions	913.00		Equipment account	5,185.44
	Donations	27,641.00		Repairs	249.97
	House account, income from rentals, etc	4,602.85		Office expenses, (including salary of secretary and printing)	2,258.04
	Class account, returns for services of teachers	3,864.45		House account	7,449.53
				Class account (including salary of superintendent and services of teachers)	5,967.30
				Deposit in U. S. Trust Company to credit of the association	12,000.00
				Balance in Mechanics' Bank	698.43
		38,702.81			38,702.81
1887.					
Apr. 1.	Balance in bank	698.43			

JOHN S. BUSSING, *Treasurer.*

Certificate of deposit, No. A, 48223, in U. S. Trust Company.

Audited and found correct { A. M. DODGE.
MELBERT B. CARY.
E. and O. E.

APRIL 15, 1887.

The following is the prospectus of the training college to which he refers:

PROSPECTUS OF THE PROPOSED COLLEGE FOR THE TRAINING OF TEACHERS.

The College for the Training of Teachers is to be founded to give systematic instruction to persons desirous of entering on the profession of teaching. For the present at least the instruction given will be almost wholly confined to those hitherto neglected factors in education which may be included under the name of industrial training. Both male and female students will be admitted to the college.

Efficient and practical instruction in the best methods of industrial education will be given by a competent corps of instructors, under whose direction and criticism students will also teach the pupils of the model school.

REQUIREMENTS FOR ADMISSION.

As a general rule no student will be admitted to the college until he shall have attained the age of eighteen years. In special cases this requirement may be suspended by vote of the faculty.

Applicants for admission are required to pass an approved examination in the following subjects:

Arithmetic.—Prime and composite numbers, greatest common divisor, least common multiple, denominate numbers, common and decimal fractions, percentage, simple and compound interest, discount, alligation, square and cube root, compound numbers, and the metric system of weights and measures. The books of Peck, Wentworth and Hill or Greenleaf are recommended.

Plane geometry.—As much as is contained in the first five books of Davies' Legendre.

English.—Parts of speech, inflection, parsing and false syntax. Also, penmanship and orthography. The grammars of Swinton, Whitney, Brown or Greene are recommended.

History.—Anderson's or Johnston's History of the United States, or its equivalent.

Composition.—Each applicant will be required to write a composition covering at least one sheet of foolscap paper on some subject to be given out at the time of the examination.

Equivalent books to those named above may be offered by the applicant.

Any student admitted conditionally must satisfy his conditions before December 1st, unless excused by vote of faculty.

SPECIAL STUDENTS.

Special students are received and permitted to select such courses as they may choose and be found qualified to enter upon.

COURSE OF STUDY.

The regular course of study is as follows:

For male students.—History and science of education, two hours a week; mechanical drawing and wood-working, four hours a week; modelling and industrial art, three hours a week.

For female students.—History and science of education, two hours a week; mechanical drawing and wood-working, three hours a week; modelling and industrial art, three hours a week; domestic science, five hours a week.

Students will also be required to teach, under supervision, in the model school, and to attend various courses of lectures on educational, scientific and literary subjects that will be arranged for. Certain courses of instruction and lectures in other colleges in New York City will also be open to the students.

TUITION FEES.

The terms for tuition for the full year's course are $60. The terms for special and partial courses will be made known on application. A limited number of scholarships have been established to aid deserving students.

DORMITORY ACCOMMODATIONS.

The college will have dormitory accommodation for twenty-five female students, and the room rent varies from $120 to $150 for the scholastic year. Board, lodging, and washing will also be furnished to a limited number of female students for $350 for the scholastic year.

SCHOLASTIC TERMS.

The first term of the regular course of study commences on the third Thursday in September and ends on the third (or fourth) Thursday in December. The second term begins on the first (or second) Tuesday in January and ends on the Thursday before Easter.

The third term begins the Wednesday after Easter and ends on the third Wednesday in June.

All scholastic exercises are suspended on Thanksgiving Day, Washington's Birthday, Ash Wednesday, on public holidays established by law, and on such days in each year as may be recommended by the civil authority.

The entrance examination for 1887 will be held in the College building, No. 9 University Place, on Tuesday, September 13th, at 9.30 A. M.

Application for admission to the college must be made to

H. R. BURNS, *Superintendent,*
9 *University Place, New York City.*

Officers of instruction and government.—Nicholas Murray Butler, A. M., Ph. D., President, Professor of the History and Institutes of Education; Helen R. Burns, Superintendent and Secretary of the Faculty; Charles R. Richards, Professor of Mechanical Drawing and Wood-Working; Julia H. Oakley, Professor of Domestic Science; —— ——, Professor of Industrial Art.

Instructors in the model school.— —— ——, grammar grade; —— ——, primary grade; —— ——, kindergarten.

The report shows a list of 46 "active members," 91 "associate members," 19 "corresponding members," and 30 "honorary members." Among the names of new "honorary members" are those of President Gilman, of Johns Hopkins University, and President Walker, of the Massachusetts Institute of Technology.

The list of donors shows eleven gifts, each of $1,000 and over, one of which, by Mrs. George W. Vanderbilt, was for $10,000. It will also be noticed in the reference to the library in the report that the number of volumes has nearly doubled since the report of the previous year.

The following is the list of Trustees and Officers for 1887–'88:

INDUSTRIAL EDUCATION ASSOCIATION,

[No. 9 University Place, New York.]

Trustees, 1887–'88.—Mr. Nathaniel A. Prentiss, Chairman; Mr. M. Dwight Collier, Vice-Chairman; Mr. William A. Potter, Secretary; Gen. Alexander S. Webb, Mr. Melbert B. Cary, Mr. Arthur M. Dodge, Mrs. Peter M. Bryson, Mrs. William T. Blodgett, Mrs. Joseph H. Choate, Mr. William F. Bridge, Miss Grace H. Dodge. Mr. Charles E. Merrill, Prof. J. H. Van Amringe, Miss S. Edwina Brown, Mr. George W. Vanderbilt.

OFFICERS AND STANDING COMMITTEES, 1887–'88.

Officers.—Dr. Nicholas Murray Butler, President; Mr. Melbert B. Cary, Treasurer; Mr. William A. Potter, Secretary; Miss H. R. Burns, Superintendent.

Executive Committee.—Miss Grace H. Dodge, Chairman; Mr. Charles E. Merrill, Mr. E. Monroe Smith, Miss Katharine Van Nest, Miss S. Edwina Brown, Mrs. Peter M. Bryson, Mr. William A. Potter.

Finance Committee.—Mr. William F. Bridge, Chairman; Mr. Arthur M. Dodge, Mr. M. Dwight Collier, Gen. Alexander S. Webb, Miss S. Edwina Brown.

Auditing Committee.—Mr. John S. Bussing, Mr. Walter Howe, Mr. James W. Pinchot.

Mr. Nathaniel A. Prentiss, Dr. Nicholas Murray Butler, Mr. Melbert B. Cary, *ex officio* members of all standing committees.

A more recent statement of the development and work of the Association was made by the President, Dr. Nicholas Murray Butler, in an address delivered in Baltimore, November 1, 1887, to which reference has already been made in the brief account of the organization of a similar society in that city (see ante, pp. 180–6).

Dr. Butler, on that occasion, summed up the past work and present plans of the association. He said, in the course of his address:

> The association has had under instruction 4,383 pupils, 2,991 of whom have been members of classes held outside of the building, but instructed by teachers in the employ of the association. Over 400 pupils were enrolled in vacation classes held in July and August last. A course of public lectures was given and attracted much attention.
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> A museum had been opened, which served as an object lesson in industrial education. It is always open to visitors, and many teachers and other interested persons visited it daily. From it the eye takes in at a glance the possibilities resulting from the combination of manual and mental exercises, and sees how they supplement and depend upon each other.
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> ### PROPOSED TRAINING COLLEGE FOR TEACHERS.
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> During the winter of 1886–'87 the managers of the association had been considering the establishment of a pedagogium or training college for teachers. This was finally decided upon, and the present president of the association was elected and instructed to organize such a training college. He was also chosen to the presidency of the college, and to hold in it the professorship of the history and institutes of education. Since the report of last spring. in which all these facts are embodied, was issued, great advances have been made and the plans there outlined have been put into successful operation. The training college, which in its first class has 16 regular and 22 special students, is not a normal school, in which elementary education and special training are combined. But, like the law or medical school, this training college demands as qualification for entrance the possession by the candidate of a good general education. The college course lasts two years and is special and technical. It aims to give the prospective teacher a thorough knowledge of the human mind, its processes and powers and acquaintance with the history of education, and practical instruction in didactics or the art of teaching.
>
> The law school has its new moot courts and the medical college its dissecting-room, in which the pupil combines practical work with his theoretical instruction. The New York Training College secures this practical work for its pupils in the model school, which was instituted in connection with the college. In this school the college student gets an acquaintance with the practical details of school-room work and an insight into child character. The curriculum of this model school is that which the association advocates for all schools. Its lowest grade is a kindergarten, and in the primary and grammar grades manual training takes its place side by side with the three R's, and instruction in geography, history and elementary science. Normal classes are also held in order to train teachers in drawing, modelling, carpentry, sewing, cooking, etc. This is necessary, because one of the greatest obstacles to the general adoption of industrial education is found to be the lack of trained teachers qualified to give instruction in the branches advocated.
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> ### FREE LIBRARY, MUSEUM, READING-ROOM AND LECTURES.
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> An educational library, a reading-room, the museum and a public lecture course are all carried on in connection with the work of the institution. All of these are free to those who wish to use, and the lectures, which are given twice each week, attract large audiences of interested teachers. A large correspondence is carried on with boards of education, superintendents of instruction and others, with a view to interest them in industrial education, and informing them about it. Our association is now prepared to furnish the outlines of an elementary course in woodworking, an elementary course in sewing, and three courses in cooking. Other syllabuses are being prepared, and will be ready in a few weeks.

NEW PUBLICATIONS.

The publication of leaflets, giving information on scientific points concerning which questions are continually asked, has been begun, and leaflet number one is now in the press. Early in 1888 the first of a series of educational monographs will appear bearing the association's imprint. Among the contributors to these monographs will be the most distinguished educators, both of this country and abroad, and the aim of the series will be to diffuse sound information on educaional topics in an inexpensive form.

THE FOURTH ANNUAL REPORT.

The latest official information of the work of this progressive Association is given in the President's Report for the year ending March 31, 1888, under date of May 4, 1888.* He says:

TO THE BOARD OF TRUSTEES OF THE INDUSTRIAL EDUCATION ASSOCIATION:

The President respectfully presents the following report upon the work of the Association during the past year: * * * It is interesting to note that an organization founded as a philanthropic enterprise has become a great educational force, and has changed its platform of humanitarianism for one of purely educational reform and advancement. In so doing it has only followed the analogy of educational progress in many quarters. In England popular education, so far as such a thing existed, was nothing more than a public charity until 1870. In that year the passage of Mr. Forster's great Elementary Education Act raised it to the plane of a public duty. Half a century ago all the free schools that New York City possessed were those of the various religious organizations and those of the Free School Society. To-day the system of public education in this city is one of the most important departments of the municipal government. These illustrations might be multiplied indefinitely. They indicate that a science of education has been slowly evolving, and that it is differentiated from philanthropy and from charity, as well as from theology and economics. Unfortunately the administration of public education is not yet wholly differentiated from the art of politics.

The recognition of education as a science marks a distinct advance in civilization, but the importance of this advance is unquestionably less apparent to those who make it than it will be in years to come to those who will write the history of its making. The recognition of education as a science means the study of the child and the study of the child's environment. It means the putting away of whims and fancies and the gradual displacement of crude theories and imperfect methods. It makes rational advance possible. The Industrial Education Association has taken its stand upon this platform. It believes that education is the training of the child for life, and that as our knowledge of the child increases and the conditions of life change, the means of education must be adapted to this knowledge and to these conditions. It views education as not stationary, but progressive, and holds that any enduring advance must be the product, not of revolution but of evolution.

Reference is made to a former report in which the principle was announced that Industrial training to have its fullest value must be an integral part of general education. Commenting on this. President Butler says:

* * * If manual training is technical training, if it is only a passing fancy, then the claim which we make for manual training as a factor in common school edu-

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*Annual Reports of the President and Treasurer of the Industrial Education Association made to the Board of Trustees, May 4, 1888, New York; printed for the Industrial Education Association, 1888. Pp. 24.

cation is ill-founded. It is because manual training is mental training, because it supplies a general and not a mere local need, and because it is founded on the nature of the child's mind and its capacities, that the work of this Association is justified and will be successful.

He then proceeds at some length to describe and define the classes of work undertaken by the Association:

The work of the Association is sharply divided into two parts. One branch of our work is concerned with the creation of a public interest in manual training as an intellectual discipline, and involves the publication of information bearing on the subject. Under this head I class the publications of the Association, the lectures and arguments delivered by its officers, and the very extensive correspondence which is carried on at an enormous expenditure of time and labor, with educators in all parts of this country and of Europe.

So great have been the demands for all kinds of educational information that a number of foreign corresponding members, to whom inquiries can be referred, have been appointed.

* * * The following gentlemen have already signified their acceptance of corresponding membership: Sir Philip Magnus, of London; Oscar Browning, M. A., of Kings College, Cambridge; John Frederick Heyes, Esq., of Magdalen College, Oxford; Prof. A. Salicis, of Paris; Robert Seidel, of Mollis, Switzerland; Prof. A. Sluys, of Brussels; Dr. E. Hannak, of Vienna, and Dr. Otto Salomon, of Nääs, Sweden.

The publication beginning in November, 1887, of Educational Leaflets, of which fourteen had been issued, is recorded, as also the issue in January, 1888, of the first of a proposed bi-monthly series of Educational Monographs, to be written by leading educationists. Of these he says:

The opening numbers of the series contributed by President Gilman, of Baltimore; Dr. Belfield, of Chicago, and Sir Philip Magnus, of London, have been very favorably received by the press, and we are justified in believing that the series will be well supported.

The President and other Officers of the Association have delivered addresses in several places. The President has spoken officially in a large number of leading cities and before educational bodies and associations. One of them, the admirable paper read by President Butler before the Department of Superintendence of the National Teacher's Association in Washington, March, 1888, is given in one of the appendices to this volume.*

The second branch of the work of the Association is the strictly educational. It consists of three parts: The College for the Training of Teachers, the Model School, and the special classes.

In the account of The Training College for Teachers, the present condition of the Normal Schools of the country is discussed, and the College of the Association differentiated from them. Of the work of the college the President says:

The Training College which this Association has founded is a strictly professional school. The course of study is two years in length, and is designed solely to train broad-minded, cultured, professionally trained teachers. It is based on pyschology, and includes also the history and science of education, methods of teaching, including the subjects included in the term manual training, observation and practice in the model school, the theory and practice of the Kindergarten, natural science, including the construction of simple illustrative apparatus and history. The two subjects last mentioned are included because of their value as part of a teacher's equipment. The comprehension of the course of history and its philosophy will give to the teacher that imaginative insight and readiness in illustration which is so valuable in training the child's mind.

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*See Appendix L, VII (a)—"How and to what extent can Manual Training be engrafted on our public schools?"

No academic instruction is given at the College. Candidates for admission are required to be at least eighteen years of age and to present certificates of graduation from an approved high school or academy. Graduates of normal schools and of colleges are admitted without examination. All other applicants are rigidly examined in arithmetic, plain geometry, history, geography, elementary science and English. It is in contemplation to add free-hand drawing to these requirements, in order to emphasize its importance as a school subject.

On March 15, 1888, when the catalogue of the current year was issued, there were 18 students in the junior class of the Training College and 86 were enrolled as special students and pursuing special courses. Of the 104 but 8 were men. It is safe to predict that the number of male students will increase largely as it becomes generally known how great is the demand for trained men to introduce and supervise manual training for boys.

The experiment of teaching light wood working to girls, successfully begun some years since by Professor Hagar in the State Normal School at Salem, Mass., has been repeated here with like success.

One of the most interesting and perhaps novel results of the year's experience has been the demonstrated ability of the female students to use wood working tools. The professor in charge of that work says in his report: "The work of the students in the wood working shop has been somewhat of a revelation. The readiness with which the tools have been handled and the skill acquired in their use have been surprising, while the accuracy of the results would seem to prove that the training is as suitable for girls as for boys." During the second and third terms the students of the training college have taught large classes of children, and have so laid the foundation of their practical experience as teachers.

The growth of the college is shown by the following statement of the change in and additions to the force of instructors:

The teaching staff of the college must receive two additions before a second year's work is entered upon: a professor of natural science and professor of history and methods of teaching. These appointments have already been authorized and will shortly be made. On April 27, 1887, Miss Julia H. Oakley was chosen professor of domestic economy, and Mr. Charles R. Richards, professor of mechanical drawing and wood working. In June, 1887, Miss Angeline Brooks was appointed professor of the theory and practice of the Kindergarten, and Mrs Hannah Johnson Carter, professor of industrial art. All of these appointments are made at the pleasure of the board of trustees. On April 14th, 1887, Miss H. R. Burns, superintendent of class work, resigned her position. Appreciating the value of Miss Burns' services, and knowing how helpful her energy and ability had been in the past, the board hesitated to accept the resignation. In October, however, Miss Burns insisted on its acceptance and withdrew from the work of the Association. The vacancy thus created remained unfilled until December 22d, when the office of Dean of the Faculty was created and Mr. Arthur W. Tyler, of Plainfield, N. J., chosen to the position. In view of the rapid increase of the work assistants have been asked for in several departments. One has already been appointed in the wood working department, and an application for an assistant in the Kindergarten is pending.

As in other normal schools, the college has a model school attached; opportunity was also given to public school children to come each day at 3.30 P. M. for free instruction—

> In sewing, domestic economy, industrial art, and wood working. * * * Over 2,400 children applied for these privileges, but lack of room compelled us to turn away over 1,000, and only about 1,400 were received.

These decreased from various causes till in March only 508 attended.

> Of this number, 116 were instructed in sewing, 167 in domestic economy, 142 in industrial art, 83 in wood working. The mere presence of these large bodies of children after school hours and without any inducement or hope of reward is sufficient comment on the statement sometimes thoughtlessly made that the children do not like nor need manual training. It would be interesting could we learn from the parents or teachers of these children, what effect, if any, their manual training has had upon them. It is a matter for regret that such information is unobtainable.

A number of extra classes have been held for the purpose of reaching as many school teachers and students as possible. In all, thirty-three such classes were held, attended by 930 pupils. The "summary" given in the catalogue* shows a grand total, including officers and students, of 1,689.

The usual lectures were given from October to June. A reference library of a thousand volumes has been given by one of the members of the board of trustees.

The president eloquently recites the rapid progress of manual training:

> During the year, Albany, Newburgh, Paterson, Detroit and Saint Paul, among the larger cities, have introduced manual training. The leaflets published by this Association have recorded the facts concerning these cities and may be referred to for fuller information.

He briefly recounts the action of the New York City Board of Education, the action of the Legislatures of New York, Pennsylvania, Maryland, and New Jersey, and the appointment, by the Department of Superintendence of the National Education Association, at the meeting held in Washington in February, 1888, of a special committee on the subject.

THE COURSE OF FREE PUBLIC LECTURES.

The free public lectures began October 18, 1887, and are "to continue till June 1, 1888, on Tuesday and Friday afternoons of each week at 4 o'clock. The lectures are delivered in the hall of the Association's College for the Training of Teachers, No. 9 University Place." A schedule of the lectures, giving the topics and the names of the lecturers, is issued.

From one to five lectures are given by each lecturer. The list includes the names of many well-known educators, and of some of those who have been particularly connected with the movement for industrial and for manual training.

Among those are the names of Assistant Superintendent N. A.

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* Industrial Education Association—College for the Training of Teachers, Circular of Information, 1888. Pp. 33.

Calkins, of New York City; Superintendent Barringer, of Newark, N. J.; Superintendent C. E. Meliney, of Paterson, N. J.; Professors Ware and Peck, of Columbia College, and Messrs. George H. Baker, A. M., W. A. Carpenter, PH. D., D. K. Dodge, PH. D., Wm. A. Dunning, PH. D., instructors in Columbia College; Vice-Chancellor H. M. McCracken, PH. D., of the University of the City of New York; Prof. Charles R. Richards, Professor of Mechanical Drawing and Wood-Working; Arthur W. Tyler, A. M., Librarian; Miss Angelina Brooks, Professor of Kindergarten Methods; Mrs. Hannah J. Carter, Professor of Industrial Art in the College for the Training of Teachers; Dr. Wm. A. Hammond, of New York City; Professor H. M. Leipsiger, of the Hebrew Technical Institute of New York City; Professor Walter S. Perry, formerly Director of Drawing in Worcester, Mass., now Director of Pratt Institute, Brooklyn, N. Y.; Principal Wm. M. Giffin, of the Newark (N. J.) Training School; Principal B. C. Gregory, Washington Street School, Newark, N.J.; Principal J. A, Reinhart, PH. D., High and Training School, Paterson, N. J.; Miss L. E. Fay, Supervisor of Drawing, Springfield, Mass.; Mrs. Mary H. Peabody; A. W. Edson, Esq., Agent of the Massachusetts State Board of Education; Professor W. O. Atwater, of Wesleyan University; Col. Francis W. Parker, Cook County (Ill.) Normal School; Charles H. Ham, Esq., of Chicago, Ill.; Charles Barnard, Esq., of the Chautauqua Town and Country Club; Mr. Stanton Coit, PH. D.; Dr. Jerome Allen, editor of the School Journal; Theodore F. Seward, Esq., editor of the Musical Reform; Mr. T. O'Conor Sloane, PH. D., of the Scientific American.

PUBLICATIONS OF THE ASSOCIATION.

In pursuance of its plan of disseminating information concerning industrial education, the Association began, November 1, 1887, to issue "Educational Leaflets." These are sold at one cent each, or fifty cents a hundred; fifty cents will entitle a subscriber to receive promptly all issued for one year. The following are announced: 1, The Argument for Manual Training; 2, Public Education in Germany; 3, The Albany Report on Manual Training; 4, Manual Training in Springfield, Mass. A prospectus is also issued of a series of proposed "Educational Monographs" to be published during 1888. These are to contain from twenty-four to sixty pages, and to treat concisely all educational questions; particularly those relating to the manual training movement. They will be in pamphlet form, and six numbers a year are promised; subscription price, one dollar a year. The authors, as announced, are to be President D. C. Gilman, of Johns Hopkins University, who begins the series with "A Plea for the Training of the Hand;" Charles H. Ham, of Chicago; Sir Philip Magnus, of London; Oscar Browning, M. A., of Kings College, Cambridge, England; Dr. Edward Channing, of Harvard College; Prof. George H. Howison, of the University of California; Mrs. Constance

Jones; Prof. L. W. Spring, of Williams College, and Prof. W. H. Payne, of the University of Michigan.*

In addition to the official publications of the Industrial Education Association, and its predecessor, the Kitchen Garden Association, a knowledge of the work undertaken by these interesting societies has been widely extended by means of illustrated and literary articles in various publications. "How Fraulein Mina Schmidt goes to school" (and learns there to cook) was charmingly told in the September (1884) number of St. Nicholas; as, likewise, in the April (1885) number of the same magazine, the story of "The Boys' Club" held in the old home of the Kitchen Garden, No. 125 St. Mark's Place, was given by the same writer, Mr. Charles Barnard, himself an active member of both associations. The National Baptist, of Philadelphia, gave an account of the Kitchen Garden classes, and, in June (1887), Science published an interesting account of The Industrial Education Association.

"THE BOYS' CLUB."

The Report of the Boys' Club for 1886 is a very suggestive pamphlet, well worthy the attention of all interested in the welfare of the poor boys of city streets. The club is supported by gifts aggregating over $1,400 for the year ending October 31, 1886, and offers to these poor boys innocent and instructive amusement and occupation, and a comfortable refuge from the streets, with the charm of companionship. It is open every evening except Sundays and holidays. It is a foster child, as it were, of the Kitchen Garden Association, not as direct in lineage as the "Cooking Garden," as the method of instruction for elementary cooking classes that have grown out of the Kitchen Garden experience is called, but it had its origin in the same spirit and desire of helping the children to better lives than had otherwise been possible: of infusing into their darkened days the sunshine of happiness.

THE INSTITUTIONS WHICH HAVE SPRUNG FROM THE WILSON MISSION.

What a band of instrumentalities for good, in ways the early founders of the Wilson Mission could hardly have imagined, have sprung from, and grown up around, that practical experiment of an industrial school for girls begun by those good Christian women in 1854; not unlike, with these clustering schools and "Associations," to Milton's description of the Banyan tree, the "Indian Fig," which:

> In Malabar or Deccan spreads her arms
> Branching so broad and long, that in the ground
> The bended twigs take root, and daughters grow
> About the mother tree, a pillar'd shade
> High overarch'd, and echoing walks between.

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*For the various publications, the Registrar of the College for the Training of Teachers, No. 9 University Place, New York City, is to be addressed.

First, as we have here recorded, came the development of the Kitchen Garden Association; then, naturally, the elementary cooking classes were evolved; meantime the needs of the boys were not forgotten, and Mrs. Briant invented for them the "Farm Garden," while, after a little time, the home in Saint Mark's Place, long so hospitable to poor girls and to new ideas, swung its doors wide open to the boys for an evening refuge from the streets.

Then it was that on these foundations the Industrial Education Association began to build, as has just been recorded; multiplying the little housekeeper classes of the Kitchen Garden and the elementary classes in cooking, adding, for the young women who wished to learn, a school for the thorough training of efficient domestic servants; then originating the great exhibition of children's work for the instruction of the public; supplementing this by a course of popular lectures by leading educators, advocates of the new methods, and by establishing a special industrial education library and an industrial museum. All this while, too, the managers of the new Association were making free use of the printing press, both in publishing its own special works and notices, and, by securing popular illustrated articles in the magazines descriptive of its various undertakings, as well as by frequent accounts and notices of its work in the daily journals; striving thus, by every legitimate means, to interest and inform the public in regard to the varied work it had undertaken for the public. Finally, in founding a training college for the instruction of teachers in these new methods, the Association emphasizes its repeatedly expressed desire to aid in the introduction of feasible forms of industrial training in the public schools. By this continuous activity, and by the use of these various methods the Industrial Education Association of New York City has, within four short years, made its influence felt far and wide.

It is now known of all men that a new educational power for good has been developed; which is so vigorous and so far reaching that its influence is felt, not only in the great metropolis, but throughout the United States.

These various undertakings, with their several steps and methods, have been so minutely recorded, because they have proved so effective, and are such as may be readily adopted in other communities; since there is no city or large town in the country in which there is not need of similar efforts. In the light of this history of the outgrowing of the Wilson Mission Industrial School for Girls no earnest workers need hereafter ever be discouraged, no matter how small their first beginnings, from making an honest effort with like purpose, in accordance with the methods that have here been tested.

THE RELATION OF THESE MOVEMENTS TO THE PUBLIC SCHOOLS.

Still, however interesting and encouraging are the results of these efforts, their valid claim to record here in this connection is based upon the light they may throw upon the problems of industrial education as they are presented in relation to the public schools, and upon the possible influence of the results of these educational experiments, initiated by the Industrial Education Association of New York, in moulding the opinions of the public school authorities of that city, and in encouraging them to venture to offer like opportunities for industrial training to some of the thronging pupils in the crowded public free schools of the metropolis.

It is worthy of observation also that the managers of this New York association have called to its support not only the public school authorities in various places, but the directors of private institutions and the Presidents of great Universities and Technological Colleges. Here is, at last, a public recognition of the essential solidarity of all the educational forces of the country, the need of which recognition, especially in the older States, has often been apparently ignored,—a "great gulf" seeming to be "fixed" between the humble teacher in the democratic public school and the professor in the more exclusive institution of higher learning. A most unwise and unjustifiable divorcement of interests and of power!

THE INDUSTRIAL EDUCATION ASSOCIATION OF NEW JERSEY.

The credit of initiating the movement which resulted in the organization of this Association, modelled closely after the pioneer Association of New York, the history of which has just been recited, is accorded by State Superintendent Chapman to the late General McClellan, who, when Governor of the State, as has been already shown in this Report, manifested great interest in endeavoring to promote artistic and industrial education, seeing clearly their relations to the important manufacturing interests of the people of New Jersey.

Extracts from Superintendent Chapman's annual report, giving a brief account of this movement in New Jersey, together with the report to the managers of the Association made by Miss Lowden, the teacher employed by them to introduce industrial training in the schools of Hoboken, have already been given (see ante, pages 163–5).

Attention has been called to the various schools and instrumentalities that, sprung from a single source in an obscure quarter of the city, have culminated in the many activities of the New York Association; which, itself, had hardly been organized for a year, before its example was followed in New Jersey, as, within the present year, it has so recently been in Baltimore.

How far that little candle throws his beams!

The following accounts of the organization and proceedings of the new society, and of the exhibition of children's work held under its auspices, are taken from its first annual report;* for copies of which

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*First Annual Report of the Industrial Education Association of New Jersey. Office, No. 14 Seventh Street, Hoboken, New Jersey. Pp. 25.

I am indebted to the courtesy of the president, Rev. G. C. Houghton.

ORGANIZATION OF THE INDUSTRIAL EDUCATION ASSOCIATION.

A meeting of ladies and gentlemen, in response to an invitation to assist "in the formation of an Industrial Education Association," was held on the evening of Friday, June 5, 1885, at 8 o'clock p. m., at the residence of Mrs. E. A. Stevens, Castle Point, Hoboken, N. J.

The meeting was called to order by the Rev. G. C. Houghton, who nominated General George B. McClellan as presiding officer; which nomination, having been duly seconded and put, was unanimously adopted.

Robert H. Alberts was then selected to act as Secretary.

Upon assuming the chair, General McClellan spoke at some length on the objects for which the meeting had been called, and then requested the following-named gentlemen to address the meeting on the subject of "Industrial Education":

Mr. Randall Spaulding, of Mont Clair, N. J.
Prof. Henry Morton, Stevens Institute, Hoboken, N. J.
Prof. C. F. Kroeh, Stevens Institute, Hoboken, N. J.
Presiding Judge Alex. T. McGill, Hudson County Common Pleas, Jersey City, N. J.
Rev. Samuel Dod, Hoboken, N. J.
Dr. Frank Nichols, Hoboken, N. J.

Upon the conclusion of the speaking opportunity was offered to any persons present to address the meeting, but there being none desirous of so doing, the following resolutions were presented, read and adopted:

Resolved, That this meeting be organized as the "Industrial Education Association of New Jersey," and that all who are interested in the cause of industrial education be invited to join the society; and further

Resolved, That a committee be appointed by the President of this meeting to draft a Constitution and By-Laws and adopt the same, and have them printed and mailed, with a copy of the minutes of this meeting, to all who are present this evening; and further

Resolved, That the committee be authorized to select from their number officers of the association, who shall serve until their successors are chosen by the society; and further

Resolved, That the committee be requested to obtain consent, if possible, from the trustees of the public schools of Hoboken and of Stevens Institute and of the several academies, to make a trial of one or more branches of the industrial system in the schools under their care; and further

Resolved, That we pledge our hearty support to the committee in their endeavors; and further

Resolved, That the Chairman of the committee be requested to call a meeting of the association in the early fall, at such time and place as the committee may determine upon.

The following committee, in accordance with the tenor of the above resolutions, was then announced by the chair:

Rev. G. C. Houghton, Mr. August Stein, Mr. David E. Rue, Thomas H. McCann, Esq., Mrs. Edwin A. Stevens, Mrs. Archibald Alexander, Professor Henry Morton, Professor James E. Denton, Thomas F. Hatfield, Esq., Mr. Emil Cuntz, Mrs. Daniel S. Merritt, Miss Annie Sierck.

Rev. G. C. Houghton then made some pertinent remarks relative to the object for which the meeting had been called.

There being no further business to come before the meeting, it was then duly adjourned, previous to which those present were invited to partake of a collation in the dining-room of the castle, and to be introduced to General George B. McClellan.

ROBERT H. ALBERTS,
Secretary.

REPORT.

On June 5, 1885, a meeting of citizens was called at Castle Point to consider the subject of industrial education. General George B. McClellan presided, and addresses were made by General McClellan, Rev. G. C. Houghton, Mr. Randolph Spaulding, Professor Henry Morton, Professor C. F. Kroeh, Presiding Judge A. T. McGill, Dr. Frank Nichols, and others.

A committee was appointed by General McClellan, which held its first meeting at Castle Point on the 19th of June. The Rev. G. C. Houghton was elected chairman of the committee, and it was decided that the name of the Association to be formed should be the Industrial Education Association of New Jersey. The necessary officers were then elected and meetings were held on June 22, July 6 and July 13; the present constitution and by-laws were very carefully considered and finally adopted, and arrangements were made looking forward to the introduction of industrial education in the public schools of Hoboken in the autumn. On the 20th of November the Association again met, and Mr. McCann, of the Board of Education of the city of Hoboken, stated that permission had been granted to place a teacher in the public schools for the purpose of giving systematic instructions in sewing to the girls and in clay modelling to the boys, under the supervision of the committee on teachers' salaries and school government and the superintending principal; provided, however, that all expenses attending such industrial education should be borne by the Industrial Education Association of New Jersey. A teacher, Miss N. N. Lowden, competent to give instructions in both branches, was secured, and a subscription list was circulated among members only. This realized a sufficient amount to cover the expenses of the outfit for eight classes and Miss Lowden's salary for December and January, so that an appeal to the citizens in general was not necessary until the attempt to introduce industrial education into the public schools proved to be successful. The results of the Association's work have been already highly satisfactory but this is only a very small beginning of what the association hopes to accomplish, if properly supported by the citizens of Hoboken. The necessities of industrial education for the children of the present time are universally conceded.

E. A. M.

A copy of the by-laws, in twenty-six sections, follow. Most of these sections are identical with those of the New York Association.

Those relating to the "committees," as they differ somewhat from those of the New York society, are here quoted:

XIII. STANDING COMMITTEES.

There shall be four or more standing committees, as follows:

(*a*) Committee on finance.
(*b*) Committee on books and printing.
(*c*) Committee on industries.
(*d*) Committee on domestic economy.

The committees shall make bi-monthly and annual reports of their work at the regular meetings of the board of managers.

Estimates for expenditures by standing committees, other than for petty expenses, must be approved by the board of managers. Manuscript designed for publication must receive the approval of the standing committee from which it emanates before being submitted to the board of managers.

XIV. COMMITTEE ON FINANCE.

It shall be the duty of the committee on finance to devise means for obtaining the funds requisite to carry on the work of the association.

XV. COMMITTEE ON BOOKS AND PRINTING.

It shall be the duty of the committee on books and printing to prepare for publication such matter as the Board may authorize, to keep itself informed of publications upon industrial education and pursuits, and, with the approval of the Board, procure for use in the library or for distribution, those deemed of special value.

XVI. COMMITTEE ON INDUSTRIES.

It shall be the duty of the committee on industries to study, devise and present for the consideration and approval of the Board methods and systems calculated to develop industrial education, and to use all available means to introduce the same into private and public schools, reformatories, asylums, orphanages, and such other institutions as may offer a suitable field. In all schools where industrial work shall come under the direct supervision of this committee the sessions shall be from October to May.

XVII. COMMITTEE ON DOMESTIC ECONOMY.

It shall be the duty of the committee on domestic economy to encourage the study of this subject, and to promote the thorough training of women and girls in every department of house-work. In securing this end, opportunities offered by cooking schools or other existing organizations shall be used; classes and such other agencies as may best promote this object shall be established.

It shall also be the duty of the committee to promote an intelligent interest in the house-work system, and to further its introduction whenever it may be beneficial.

THE INDUSTRIAL EXHIBITION IN HOBOKEN.

Advantage was taken of the holding of the exhibition of children's handiwork in New York early in April, 1886, to secure as many as possible of the exhibits shown there for a similar exhibition in New Jersey, which was opened in the Stevens Institute of Technology on the 15th of April.

The following condensed description appears in the report of the New Jersey association:

OUR INDUSTRIAL EXHIBITION.

The Industrial Education Association of New Jersey opened its first Exhibition of Children's Work in the Stevens Institute of Technology, in Hoboken, Thursday evening, April 15, 1886. The attendance was large and intelligent, and took a great interest in the different speeches and the excellent exhibits.

At 7 o'clock the chair was taken by the Rev. G. C. Houghton, M. A., President of the association. He briefly pointed out the object of the Association, and gave a sketch of its organization. He said that the late General McClellan was the prime mover of the organization, the first meeting of which was held on the 5th of June, 1885, in Mrs. Stevens's house, Castle Point, Hoboken. At that meeting the

Board of Education was petitioned to allow industries to be introduced into the schools of Hoboken. Lessons were given twice a week, of one hour's duration, in drawing, modelling and sewing.

The President then introduced Governor Abbett, who was received with cheers. He said:

"I have the greatest sympathy with the industrial education of New Jersey, and I am pleased too see such an excellent collection of exhibits before me. Attempts have been made to place brain power in the fingers of the children. The object of the association is to teach children to use their eyes, ears and legs, and not solely their brains. The object of the association is to enlist the sympathies of the people in the incorporation of manual training in the instruction of the children. There is, indeed, great need for such training and industrial instructions in the public school system. This movement has my heartiest sympathy as a citizen and as the executive of the State, and I assure you that it will have my earnest support."

Governor Abbett then left, having an engagement in New York. After he had finished, the Hon. Edwin O. Chapman, State Superintendent of Public Instruction, explained the working of the system and its lasting benefit to the boys and girls who often leave school at fourteen years of age. John Reid, of the Hoboken board of education, also spoke in favor of the work.

The President told of the rapid progress made in a short time in the Hoboken schools, and briefly outlined the course of instruction.

The exhibits were arranged in the physical laboratory of the college, and a large crowd attended on each of the nights and were greatly interested in the articles displayed. About the same schools were represented by exhibits that took part in the New York exhibition two weeks before.

The exhibits consisted of plain sewing, embroidery and art needle-work, drawing, painting, wood-carving, clay modelling, repoussé work in brass, imitation stamped leather, etc.

Some of the work of very young pupils was beautifully executed, and altogether the exhibition was the best practical demonstration of the value of industrial education. Some of the finest work from the Women's Technical School of New York consisted of designs for wall paper, stained glass, and portieres. In addition to the work from the Hoboken public schools and Trinity Industrial School, the exhibits from Worcester, Mass., comprised, drawing, decoration, representation and combination in color. The exhibit was exquisitely arranged, and experienced technical teachers pronounced it excellent. The work was of a high order, and was surprising to even expert mechanics. The exhibit was greatly admired. The Mont Clair, N. J., school presented a diversified display, comprising free-hand drawing and plain and ornamental needle-work. The distinguished feature of the display was the hard-wood carving. The Chicago public schools had the largest exhibit. The display of needle-work, knitting and embroidiery was beautiful. The Academy of the Sacred Heart, of Hoboken, exhibited remarkably fine lines of paintings, sketchings, and embroidery work. Trinity School, of Hoboken, exhibited many works of mechanical skill, patch-work, fancy needle-work, etc. The Italian School of New York had a magnificent display of modelling. The Hoboken public school, Miss Lowden, instructor, displayed free-hand and map drawing, modelling and elementary sewing. The Women's Institute of Technical Design, of New York, had the most complete and beautifully arranged exhibit, the principal feature being brass-work, painting, and designs by children under fifteen years of age. The New York trade schools had examples of plumbing and iron-work. The Saint Louis exhibit was evidently an example of what may be done in primary departments. The Gramercy Park Tool House, of New York, among other exhibits, had a handsome design of the East River Bridge. New York Turn Verein exhibited drawing, needle-work, knitting embroidery, etc., all of a high order of merit. Hoboken Academy displayed splint-work, clay drawings, examples of shading in color, sewing, etc. The school has altogether 400 scholars, and the system is taught by Miss Stahl, Miss Rahden, Mr. Thompson, and Mr. Laefler. The public schools of Cleveland also had a creditable exhibit. Saturday was "children's day," and fully one thousand people, young and old, from Hoboken, Jersey City, West Hoboken, Union Hill, Newark, Elizabeth, New Brunswick and other cities visited the institute and examined the large display with interest. The President of the Association delivered an impromptu address to the children, in which he urged them to get their parents interested in the system of industrial education, and promised them if they would do their part there would be a New Jersey State exhibition next year. The Officers of the Association are greatly encouraged at the success of the exhibition, and believe that it has given the cause an impetus. The articles from the various Hoboken schools certainly showed very encouraging results, considering the short time the system has been taught. Miss Lowden, the teacher of industrial work in the Hoboken public schools, was in charge, and Mrs. E. A. Merritt and Miss Sierck are the ladies interested in this work in Hoboken, and Messrs. Emil Cuntz, August Stein, T. H. McCann, David E. Rue, Professor Morton, Doctor Nichols, Doctor Chabert, Judge McGill, and other members of the Association were most active in organizing and managing the exhibition.—(*Taken from press notices.*)

The following account of the meeting which resulted in giving to the new society the means for active work is especially interesting, as showing the co-operation of the executive and educational authorities of the State in the effort to introduce the new education:

MEETING HELD AT CASTLE POINT, NOVEMBER 18, 1886.

In response to a circular invitation, a meeting of the New Jersey Industrial Association was held at Castle Point, Hoboken, on the evening of November 18, 1886, at 8 o'clock.

The meeting was in many respects a notable one. The rotunda and spacious parlors of the Stevens mansion were filled to overflowing with leading citizens from all points of Hudson County, from the neighboring county of Essex, from New York City and Brooklyn. The Stevens family, with their well-known public spirit and love for educational progress, surrendered the whole lower part of their stately residence to the uses of the meeting.

The Rev. George C. Houghton, the leading spirit in introducing industrial education in New Jersey, called the meeting to order in a few well-chosen words, in which he expressed deeply his regrets for the absence of Hon. Abram S. Hewitt, of New York, who had shown a high appreciation for this work, but at the last moment had sent a telegram stating that his health would not permit him to come out in the cool air of the evening.

Dr. Houghton nominated for chairman of the meeting the Hon. Leon Abbett, Governor of the State; for secretary, David E. Rue, superintendent of the public-school department of Hoboken. Both were elected unanimously.

In stating the object of the meeting, Governor Abbett said that he was enthusiastically in favor of the industrial educational system, and said that the object of this meeting was to present the subject to the progressive and public-spirited people of the State, so as to enlist their active sympathy in favor of the movement and to have some practical work done that would further the work which had already been inaugurated under very favorable auspices in this locality. He believed that, although the system had been first introduced in New York State, New Jersey had made more progress in that branch of education. Speaking of the public school system, he thought some improvement was needed; also better and larger accommodations for pupils. The laws are defective in some respects, particularly in not enforcing the compulsory attendance of children. The defects, however, are of such a nature that they can easily be remedied. Ample money is provided for educational purposes by the State and municipalities, but the industrial system seeks to go beyond that. It seeks to engraft upon the public school system some practical features, so that boys and girls may not only be instructed in the ordinary branches from school books, but be educated in industrial pursuits. It is difficult to interest people in any new movement, or make them realize its advantages, or think it wise, necessary, or judicious to go beyond the ordinary school provisions and education. The Association is seeking to excite public interest, and the founders have abiding faith in the ultimate success of the movement if properly and persistently pushed. There is nothing more commendable than education of every description, so that the masses can live and be governed by their own thoughts, intelligence and observation.

Henry N. Alexander, of New York—a gentleman who has travelled extensively in Europe, and who has by actual observation seen the working of various grades of the industrial scheme of education—was introduced, and gave a rapid and graphic sketch of what was being done in Europe, believing that there were two points in industrial education which should be considered, viz: Can it be engrafted upon the public-school system? If so, is it desirable? The first point the speaker did not propose to discuss, because he had not familiarized himself with the subject. Regarding the second point he maintained the affirmative. He thought that our present system was one-sided, and did not cultivate all our faculties. The business of all teaching was to draw out and develop all the faculties. A man taught only in one direction was only part of what he might be. If our educational system were defective, as he considered it was, by reason of its shortcomings or one-sidedness, it was a loss to the whole community. It was as necessary to teach our boys and girls how to work as how to read and write. The speaker contended that our apprentice system had practically died out, and in his opinion the industrial system was superseding it. Skilled workmanship in this country at present was in the hands of foreigners; our own boys, taught in our common schools, were trying to compete; but, he was very sorry to say, at much disadvantage, owing to a training which was exclusively intellectual, and lacked one of the important elements of being practical in every-day life. He considered that the industrial system, as contemplated by this organization would supply, in a great measure, the desideratum.

Prof. Henry M. Leipziger, principal of the Hebrew Technical School of New York, made an interesting speech in favor of the industrial system and the advantages of it to the rising generation. He explained the workings of the system in a Hebrew school in New York City, where considerable progress has been made. Although the Hebrew race has a marked predisposition against any kind of mechanical work, the scholars enter into their tasks with spirit and enthusiasm, and it educates not only the mind, but trains the hands. So interested had they become, that they were loath to leave the school at the closing time and lingered for hours. They were first taught plain drawing, and then, with card-board and knife, to cut and put together that which they had drawn; then ornamental drawing of the article first drawn, and with the aid of the knife and card-board to add the ornaments according to the drawing to the plain object first constructed; they were next instructed as to the use of hand brackets, and then carpenters' tools, and were taught mortising, dovetailing, etc., all from their own drawings; then to construct boxes, desks, etc.; then wood-turning and pattern-making, and recently they had begun work in iron. The schools of New Haven, Chicago and other cities had introduced this branch, and had met with flattering success. The professor referred to the dignity of manual labor, and stated that the Emperor of Germany and his family had all learned trades and that on a late birthday of the king his grandson had presented him with an artistically-bound book, the work of his own hands.

At this point the chairman requested Dr. Houghton, as president of the association in New Jersey, to give a statement of what had been done and what was being projected, etc. Dr. Houghton reviewed the history and aims of the association, explained the provision of the State law, which gives $3,000 out of the State funds, provided that a like amount was raised in any city. He thought there should be no difficulty in raising that amount in this neighborhood, nor in many others which he might name in the State. He had prepared subscription lists, which would be distributed among them, and he had no doubt but that the responses would be as generous as the subject was worthy and important. He did not deem it proper for him to extend his remarks, as many distinguished gentlemen were present from other cities whom it was a privilege to hear, and who had generously responded to their invitations to be present.

The Governor next called upon President Henry Morton, of Stevens Institute, who dwelt upon the necessity of a dual development of the head and hands, and who from observation was able to say that the one kind of training assisted the other. The variety of ideas and employment tended to strengthen the mind.

The Hon. Algernon S. Sullivan, of New York, made an eloquent speech, in which he portrayed the interest and beauty of the surroundings. Here they sat amid the evidences of Mr. Stevens's generosity and public spirit; its manifestations were all around us; this beautiful spot was his home. An educational institution second to none in the land was beside us in one of the choicest situations on the beautiful and far-famed Hudson. The commercial emporium of the western continent was under our eyes. The great cities of New York and Brooklyn were linked together by bands of steel, which, in itself, was one of the greatest mechanical triumphs of this or any other age. The harbor at our feet was a beautiful archipelago, on which nature had lavished her charms. The triumphs of art were not wanting to supplement the glories of nature. The Goddess of Liberty stood in our peerless water-way, holding aloft the torch which symbolized the enlightenment of the world by liberty's flame. In the midst of such surroundings it was highly proper for the representative men of this part of the country to meet and devise ways and means whereby our supremacy would be maintained. Our laws are very generous in their provisions for education. He thought that those wise provisions did not relieve us of a direct responsibility. There should be no difficulty in raising $3,000. It must be done. It will be done. If it is not done on this side of the river, he pledged his word that he would raise it and send it over from New York City. He did not desire to inflict this disgrace upon them, so he hoped they would relieve him of such a necessity by raising it themselves.

Judge Alexander T. McGill next addressed the meeting. He said his daily business afforded him an opportunity of observing closely the structure of society. He had noticed that among people who were properly educated and taught to work there was nearly a total absence of crime, and what did exist was of a less heinous and diabolical character than among people who never had been taught and did not know how to work intelligently. He heartily favored any movement that would give a new and proper direction to the brain power and efforts of the country. There was a congestion among the professions. The thing was so much overdone that it was a hard struggle at the present time for lawyers, doctors, clergymen, etc., to live. In mechanical directions the field was still open and inviting. It was a land flowing with milk and honey, which might be possessed by any who had the faith and the courage to qualify himself for the enjoyment.

State Superintendent E. O. Chapman was the next speaker. He went into an exhaustive review of the various schemes for the advancement of education, not only in the United States but also in European countries, ancient and modern. He showed that the power and prosperity of any people were gauged and limited by the soundness and appropriateness of their system of education. No country had made more ample provisions for the education of the common people than our own. We were an intensely practical people. As we observed a necessity we made provision to meet it. If our people in practice found our methods too theoretical, they would soon find means to meet the exigency. Education was necessarily progressive. Our methods differed from those of fifty years ago. Our appliances were improved and were still improving. He was delighted to find such an intelligent collection of ladies and gentlemen take so much interest in a subject which was admittedly of fundamental importance. He made no doubt but the practical genius of our people would solve the problem as it should be solved, and that intellectual and manual education could have co-ordinate existence to the mutual benefit of both.

Assemblyman Richard Wayne Parker, of Newark, in eloquent language enforced the absolute necessity of teaching our people not only to think, but how to work. He had always thought that one of the strongest arguments in favor of a protective tariff was that it gave our citizens an opportunity to make many things which otherwise they could not have. Their scope and variety of employment were extended, to their great advantage, in very many ways which at that late hour he must forego the pleasure of commenting upon. He believed their effort was in a right direction, and it would have all the support he could give it.

Col. Charles Fuller, of the State Board of Education, said the objects of the meeting had his hearty concurrence. The various considerations connected with it had been so well presented, that any further effort on his part would be as superfluous as trying to paint the lily—a species of foolishness that he never indulged in. To give a practical turn to affairs he proposed to commence in a new direction, and subscribe such an amount as he could afford; hoping, however, that others who had more of this world's goods would not gauge their efforts by his.

The various slips were collected, when it was found that a sufficient sum to carry on the work for the present year had been subscribed.

On motion, the meeting adjourned.

DAVID E. RUE,
Secretary pro tem.

It will be observed, by reference to the Treasurer's account, that not enough money was subscribed to enable the city to take advantage of that State law giving $3,000 in case any town or city would give an equal sum.

The Treasurer's report shows an income of $1,206.84. After paying the expenses for the year, mostly for instruction given in the four public schools of Hoboken, a balance of $115.26 remains.

The list of members, March, 1887, numbers 60; the list of subscribers, whose gifts amount to $1,161.45, numbers 61.

The following lists give the names of the Officials of this new Association:

INDUSTRIAL EDUCATION ASSOCIATION OF NEW JERSEY.

Officers, 1886–'87.—President, Rev. G. C. Houghton; Vice-Presidents, Emil Cuntz, Hon. B. T. Randolph, Dr. Henry Morton; Recording Secretary, August Stein; Corresponding Secretary, Mrs. D. S. Merritt; Treasurer, T. H. McCann; Assistant Treasurer, Miss Annie Sierck; Librarian, Mrs. Arch. Alexander.

Committee on Industries.—D. E. Rue, T. H. McCann, Miss Sierck, Mrs. E. A. Stevens.

Committee on Domestic Economy.—Mrs. D. S. Merritt, Dr. R. J. Chabert, Hon. J. C. Besson, J. W. Lycett.

Committee on Books and Printing.—Mrs. A. Alexander, E. A. Stevens, Palmer Campbell, Rev. G. C. Houghton.

Committee on Finance.—John Stevens, Emil Cuntz, Dr. Henry Morton, Dr. Frank Nichols.

Board of Managers, 1886–'87.—Mrs. A. Alexander, Castle Point, Hoboken; Mrs. D. S. Merritt, 14 Eighth Street, Hoboken; Miss Annie Sierck, 112 Hudson Street, Hoboken; Rev. G. C. Houghton, 279 Washington Street, Hoboken; Emil Cuntz, 137 Hudson Street, Hoboken; T. H. McCann, 338 Washington Street, Hoboken; David E. Rue, 332 Garden Street, Hoboken; Mrs. E. A. Stevens, Castle Point, Hoboken; Dr. Henry Morton, 179 River Street, Hoboken; Major Pangborn, 37 Montgomery Street, Jersey City; Hon. A. T. McGill, 47 Montgomery Street, Jersey City; Hon. B. F. Randolph, 270 Montgomery Street, Jersey City; Mr. John Stevens, Castle Point, Hoboken; Mr. Palmer Campbell, 3 Newark Street, Hoboken; Mr. A. B. Hartell, 55 Bloomfield Street, Hoboken; Dr. R. J. Chabert, 207 Washington Street, Hoboken; Dr. Frank Nichols, 297 Washington Street, Hoboken; Hon. J. C. Besson, 402 Bloomfield Street, Hoboken; E. A. Stevens, Castle Point, Hoboken; Dr. W. T. Kudlich, 250 Hudson Street, Hoboken; John W. Lycett, 259 Garden Street, Hoboken.

THE INDUSTRIAL EDUCATION ASSOCIATION OF BALTIMORE, MARYLAND.

Accounts of the preliminary public meeting held in June, 1887, and of the subsequent meeting in November, at which meetings the plan of forming an Association similar to that of the parent society in New York was publicly presented to the citizens of Baltimore, resulting in the appointment by the second meeting of a Board of Managers, which was authorized to complete the organization of such an Association have already been given (see ante, pages 180–6).

This Board met November 17, and having organized by the election of officers, voted to incorporate the Association. The President was instructed to nominate members for the following standing committees: On finance; on books and printing; on industries; on kindergartens; and on industries for reformatories, orphanages and asylums. A committee on industrial education in public schools, to be composed of such State and city educational officials as were members of the Association, was also proposed.

The following list of the *personnel* of these committees is from the authorized report, in the Baltimore Sun of December 9, of the action taken at the meeting of the Board of Managers held December 8:

> The various interests of the Association have been intrusted to the care of standing committees. To the following committee on finance belongs the duty of devising ways and means to secure the funds needful to carry on the work: Charles J. Baker, Chairman; Hon. Hugh L. Bond, John Curlett, Thomas E. Carson, William Dugdale, Arthur Frothingham, E. P. Fowler, D. C. Gilman, John Glenn, E. Austin Jenkins, John A. Needles, Professor Ira Remsen, Andrew Reid, Dr. Charles C. Shippen, William H. Stevenson, Dr. James Carey Thomas, J. B. N. Wyatt, William A. Wisong and W. Whitelock.
>
> The committee on books and printing prepares for the press publications to be issued by the Association, selects such books as can be recommended for use in schools and classes, and disseminates through the public press information calculated to promote an intelligent interest in industrial education. The members of this

committee are: Dr. L. H. Steiner, Chairman; Professor H. B. Adams, Joseph M. Cushing, Dr. William N. Hill, George L. McCahan, Hon. Thomas J. Morris. To the committee on industries has been assigned the task of devising methods of industrial training suitable for introduction into schools, reformatories, orphanages, asylums and other institutions. Upon it devolves a large share of the student work, which is an essential element in the efforts of the association.

The scope of this work was so large that subcommittees have been formed, to whose care special interests are delegated. By these committees public and private schools, reformatories and asylums will be visited, together with institutions where industrial training is given. These committees are as follows:

Industries.—Professor Otto Fuchs, Chairman; Col. William Allan, Cyrus Adler, John K. Cowen, Professor J. C. and Mrs. M. B. Kinear, Maurice I. Lobe, Joseph Merrefield, James H. W. Onion, Miss A. C. Palmer, Robert Poole, Charles F. Scott, Thomas Shanks, Dr. L. W. Wilhelm, Miss S. S. Bouldin, Miss H. A. Carl, R. C. Cole, jr., P. J. Doran, Professor William Elliott, jr., Miss Annie C. Meushaw, Miss M. J. Richmond, Miss S. E. Richmond, Miss Lizzie K. Smyth, Miss S. E. Trainor, Professor C. C. Wight, John L. Yater.

Industrial education in the public schools.—Professor M. A. Newell, Chairman; School Commissioner John T. Foley, German H. Hunt, N. H. Hutton, J. Morrison Harris, John T. Morris, Assistant Superintendent John E. McCahan, Albert Marshall, Rev. Royal H. Pullman, Superintendent Henry A. Wise, Francis P. Stevens.

Reformatories, Orphanages, and Asylums.—James Hewes, Chairman; T. E. M. Adams, Henry J. Bowdoin, G. Morris Bond, Professor Richard T. Ely, Dr. R. H. Goldsmith, Dr. David Genesé, Rev. William Kelly, J. Harry Lee, Joshua Lynch, Dr. John Morris, F. D. Morrison, H. F. Poske, Miss H. J. Rowe, General George H. Steuart, Miss M. Louisa Steuart, Mrs. Julia Shaffer, C. A. E. Spamer, Levi Weinberger, A. G. Warner.

The Committee on Kindergarten gathers information relating to the system, and devise ways and means of introducing kindergartens where possible. The members of the committee are: Rev. Hobart Smith, Chairman; Miss Belle Adams, Mrs. George H. Evans, Miss Jessie P. Frothingham, Rev. Dr. O. P. Gregory, Miss Alice Gilman, Mrs. James Lake, E. H. Perkins, jr., Rev. C. A. Schloegel, Rev. Charles R. Weld.

Special committees were also directed to ascertain whether the building and plant of the new cooking school could be obtained by this association, and to petition the city council to make sewing a regular exercise in the public schools.

By the citizens of Baltimore these committees will be recognized as adequately embodying and representing the active educational and philanthropic forces of the city.

To others it may be of interest to state that they include the President of the City Board of Education, the State Superintendent of Education, the Superintendent of City Schools, the President and several trustees and professors of Johns Hopkins University, the President of the Maryland Institute, the Principal of the Maryland Institute Art Schools, School Commissioners, leading teachers in the public schools, the Ex-Principal of the Manual Training School, the Librarian of the Pratt Free Library, the Principal of the McDonough School, the Principal of the Samuel Ready Asylum, and leading citizens in every walk of life. As has been the case in New York, the citizens who have undertaken this movement are in themselves the guarantee of its success.

It is not in the city which first had the enterprise to found and support a Manual Training School as one of its public schools, that this effort to promote the general introduction of industrial training in all schools is likely to fail.

A note from Dr. Richard Grady, the President of this Association, dated December 14, 1887, inclosing a list of the officers and members, contains this sentence, which shows that the aggressive character of its New York prototype is well sustained: "We hope to have the cooking school in operation at a very early date, and sewing a regular study in the public schools."

Twenty-three "associate" and eighty-one "active" members compose the Association.

The following is the list of Officers for 1887-'88:

INDUSTRIAL EDUCATION ASSOCIATION, BALTIMORE, MARYLAND.

Officers.—President, Dr. Richard Grady; Vice-Presidents, Miss H. J. Rowe, Col. William Allan, Levi Weinberger; Treasurer, Professor Otto Fuchs, Maryland Institute; Secretary, Professor George P. Coler.

Board of Managers.—Col. William Allan, Professor George P. Coler, Professor Otto Fuchs, Dr. R. H. Goldsmith, Hon. J. Morrison Harris, F. D. Morrison, Miss H. J. Rowe, Dr. J. Carey Thomas, Charles J. Baker, Joseph M. Cushing, Dr. Richard Grady, N. H. Hutton, John T. Morris, Miss S. E. Richmond, Miss Louisa Steuart, Levi Weinberger.

THE NATIONAL INDUSTRIAL ASSOCIATION, WASHINGTON, DISTRICT OF COLUMBIA.

The Industrial Education Association of New York, with the history of which this chapter begins, is, in its origin and development, a most interesting instance of the evolution of an educational idea. Fortunate in its environment, and exceptionally happy in its Managers, attracting from the first the interest of the benevolent and wealthy citizens of the richest and most powerful metropolis of the American continent, it has already reached a commanding position of usefulness and influence.

Furnished with ample means as rapidly as required, it has been enabled to accomplish great results until like a city set on a hill its light is seen afar.

The Association which now claims our notice has a very different history. Situated at the Nation's Capital, the very centre of influence, its modest work has been unostentatiously accomplished. Although, perhaps, not generally understood it is nevertheless true, that unless adopted by the Government, or endowed and supported by some private individual, there is little support to be found in the City of Washington for undertakings of this character.

The population, which is made up so largely of Government officials, with, latterly, an influx of people of wealth who come for the season, as they go to Newport, or Florida, has little interest in local institutions.

The salaried Government officials who make up the bulk of the population have, as a rule, little surplus over the bare cost of living, contrary to the rural impression, — as many a successful applicant for official position has learned, too late; while the wealthy visitors, or temporary residents, have their interests elsewhere, so that there is comparatively little of local pride or of individual wealth to appeal to in Washington, which in this respect differs widely from other American cities.

Nevertheless, as a centre for the general dissemination of ideas throughout the United States, the Capital City of the Union possesses unrivalled facilities.

It was an appreciation of this distinguishing advantage which led a few benevolent educational enthusiasts, some years since, to organize here what is believed to be among the earliest, if not the earliest, of the associations founded in the United States for the promotion of Industrial Education throughout the public school systems of the country; and also, for the stimulation of elementary industrial training in all charitable or punitive institutions.

It preceded, by a year, the formation of the New York Association, and some of the prime movers in that were acquainted with the plan of this, and had studied the practical details of the work accomplished in the single school under its auspices, and out of which, in fact, it had its origin.

Mrs. Anna Lowell Woodbury, a niece of James Russell Lowell, residing in Washington, and finding an unoccupied field for usefulness, established a Mission School for Cookery about the year 1880, a short account of which, by Mrs. Woodbury, will be given later. Mrs. Woodbury had already had experience in industrial education, having, in 1865, started the Howard Industrial School at her home in Cambridge, Massachusetts.

This school was begun in order to aid in the efforts of Generals Armstrong and Howard to help the newly emancipated freedmen, and was for the training and benefit of needy colored people who, in the transitions incident to the War, had drifted to Massachusetts from the South; the children being taught, and employment secured for the older ones. Governor Andrew and Dr. Peabody were each, in turn, presidents of the Board of Directors of this school.

Soon after its establishment, the Mission School of Cookery in Washington began to be somewhat known, and many letters of inquiry from all over the country were addressed to Mrs. Woodbury. The idea of an Association which should embrace members in various localities was thus suggested, and so this Association grew out of this Mission Cooking School, just as, later, the New York Association grew out of the Wilson Mission Industrial School.

Through correspondence with Mrs. Woodbury, a number of persons in different States expressed their interest in, and willingness to join such an Association. Hon. Arthur MacArthur, judge of the Criminal Court of the District of Columbia, and the Hon. John Eaton, then United States Commissioner of Education, heartily joined in this movement.

It is but the simplest recognition of the varied usefulness of Commissioner Eaton during his official term to record here that, if the impulse quietly but efficiently, though generally unofficially, given to similar educational and benevolent experiments throughout the length and breadth of this country; the sympathy extended to the pioneer workers, the information furnished, the suggestions made, the cordial encouragement offered to all earnest workers in educational or charitable undertakings, during the administration of this enthusiastic educator, now the honored President of Marietta College, Ohio, could be summed up and generally known, the usefulness to the public of the then almost unknown Bureau over which he presided would be better understood, and his successors in the work inaugurated by the Hon. Henry Barnard, during his brief administration as Commissioner, and so largely and successfully developed by his immediate successor, might receive that support from Congress to which, in a Republic of free schools, the Bureau of Education, established for the convenience and information of Educators, would seem to be entitled.

It is the silent, unobtrusive influence which is exerted by means of such a centre of information, in which its real value to the public lies, even more than in those official publications and acts which are known to all men.

It is only those who know from observation how freely the Government Departments at Washington are applied to for information desired by citizens all over the country, who can realize the importance of the Capital City as a centre for the dissemination of knowledge and of ideas. That this characteristic of Washington begins to be more generally appreciated may be inferred from the increasing number of National Conventions which are annually held here by various organizations.

It will be seen, on a perusal of the Constitution of this Association, that the diffusion of the idea of the Industrial Training of children, and of practical information in relation to this training, was the main thought and purpose of those who founded the Association, and that they had little other purpose. Such work as they have done has been unostentatious and largely by correspondence. Mrs. Woodbury, it should be stated, has mostly borne, from her private resources, the expense and burden of the school she founded.

The following is the Constitution as adopted:

CONSTITUTION OF THE NATIONAL INDUSTRIAL ASSOCIATION.

Established April 6, 1883.

ARTICLE 1. This Association has for its object the promotion of Industrial Education, both by the diffusion of information and by establishing and assisting industrial schools.

ART. 2. There shall be a President, eight Vice-Presidents, a Treasurer and Assistant

Treasurer, a Secretary and two Assistant Secretaries, twelve Directors from the District of Columbia, and two Directors from each of the States. These Officers shall be permanent, and shall receive no salaries. In case of a vacancy occurring among the officers, or among the members from the District, it shall be filled at the first convenient business meeting. The vote must be unanimous, and the number of members from the District of Columbia shall be limited to one hundred.

ART. 3. The President, when present, shall preside at all meetings of the Association. When the President is absent, one of the Vice-Presidents shall preside.

ART. 4. It shall be the duty of the Treasurer to keep an account of all receipts and expenditures, and to keep safely all money belonging to the Association. A report of the amount of money in his possession shall be made at every business meeting, and no money shall be paid out by him except on a written request from the Chairman of the Executive Committee. He shall also make an annual report on January 1 of all receipts and expenditures of the past year.

ART. 5. It shall be the duty of the Secretary and Assistant Secretaries to keep a record of all the meetings of the Association in books provided for that purpose; also to keep well informed of all the work undertaken by the association, and make an annual report on January 1, which shall include reports from the Chairmen of the District committees of the work which has been accomplished by them.

ART. 6. It shall be the duty of the Directors of the different States to report annually by January 1, to the Secretary in Washington, the general condition of industrial schools in their respective States, and also to give information and advice to members of the association in their States.

ART. 7. The two Vice-Presidents and four of the Directors from the District of Columbia shall act with four other members as trustees of two or more industrial schools for manual and art training in Washington, D. C. These schools will be made as complete as possible, so that they may serve for schools of reference to persons wishing to establish others.

ART. 8. The President, the Directors from the District of Columbia, the Trustees of the schools, and the Chairmen of the District of Columbia committees shall meet once a month for the transaction of business, and a majority vote of those present shall be required previous to the expenditure of any money. No debt exceeding one hundred dollars shall be incurred, and all money must be expended merely for the current expenses of the Association and for the maintenance of the schools above mentioned, except when donations are given for some special purpose. All donations shall be acknowledged by the Assistant Treasurer. If a donation of over fifty dollars is given, an account of how it has been spent will be given to the donor if desired. Any schools which have been assisted or established by special donations shall make an annual report to the Secretary at Washington.

ART. 9. There shall also be meetings held occasionally for discussion and for the reading of essays on industrial education, at which members and invited guests may be present. An annual meeting of the Association shall be held in Washington, D. C., in the month of April, and a notification of it shall be sent to all the officers and members by the Secretary. At this meeting addresses will be made and the subject of industrial education will be discussed, in the hope that it may bring more closely together those who are interested in this subject, and that each may gain something from the others.

ART. 10. There shall be a membership fee of one dollar paid by each member on joining the Association, but no further assessments shall be made. All members shall be entitled to ask for any information on industrial matters they may wish from the central office at Washington, and also to receive an annual report and a notification of the annual meeting.

ART. 11. The President shall form from the members in the District of Columbia such committees as may be required; and they shall be represented at the business meetings by their respective Chairmen.

The Association includes among its members several who have been leaders in the industrial education movement in their localities. As a number of these ladies proposed to attend the sessions of the Women's Convention in Washington in the spring of 1888, a meeting of the Association for receiving reports, etc., was called, to afford them an opportunity of attending.

At a preliminary conference, held at the residence of Mrs. Woodbury, it was decided to hold the annual meeting on April 3, 1888, and to extend an invitation to the public. Ex-Judge MacArthur, of Washington; Col. I. Edwards Clarke, of the Bureau of Education, and Professors Warder and Mitchell, of Howard University, were invited to deliver addresses on topics germane to the purposes of the society. It was also arranged that the reports of work accomplished, with descriptions of methods and results, should be presented by the Acting President, Mrs. Woodbury, and by several of the visiting members of the Association, Directors for their States, and others.

This meeting, as called, was held in the lecture room of All Soul's Church, corner of L and Fourteenth Streets northwest, on April 3, 1888.

Ex-Judge MacArthur presided and opened the proceedings by reading an able paper on the general subject of Industrial Education. Colonel Clarke, who had been requested to prepare a special address at some length and to treat of certain designated topics,—among others to give an account of the origin and present status of the New York Industrial Education Association, followed. The line of argument in the address was in substantial accord with that of the early chapters of this volume. After having discussed the various phases of the movement at some length, and referred to the confusion arising from the ambiguity of some of the terms used by the disputants, the present condition of the general discussion was summed up as follows:

"The educators have seemingly at last resolved to rest the argument strictly on pedagogic grounds. The new studies are to be urged for adoption in schools by reason of their direct value as methods of education, and their further ultimate practical value is to be treated as wholly incidental.

"For our present purpose we will assume: *First.* That the value of Industrial Art Drawing, as taught by Walter Smith and others throughout all grades of schools, is recognized as the basis of all practical and profitable school industrial training. It is to be taken for granted, just as a knowledge of the alphabet is to be assumed in any discussion as to the curriculum of schools higher than primary.

"*Second.* That the methods of the Kindergarten, and the uses of constructive drawing and of object lessons, are recognized as steps in Industrial Education.

"*Third.* That Manual Training Schools, technically so called, are for pupils of like age and grade as those who enter the High School.

"*Fourth.* That all industrial training is to be given pedagogically—that is, to be taught scientifically by ordered and progressive steps; and that this is the only practical method of instructing classes in any study and is just as essential in instruction in cooking, in housework, in domestic economy, in sewing, etc., as it is in mathematics or grammar.

"*Fifth.* That a progressive course, leading by logical orderly gradation from the Kindergarten and Kitchen Garden to the Manual Training School, alike for girls and boys, is feasible and has been sufficiently demonstrated as to leave no doubt as to the possibility of its successful prosecution.

"If an affirmative agreement by educators generally can be reached as to these five propositions, an end can be put to a world of discussion.

"There still remain problems sufficiently knotty.

"There are two which confront us at once, equally, whether public or private schools are considered. First. The above statements look to a continuous course—are adapted to a public school system, or to a continuous series of private schools, and may be admitted as to these; but what shall be done with the public school children who leave the schools at ten, twelve, or fourteen years of age, and the private school pupils who remain in a given school but two or three years?

"Professor Newell, State Superintendent of Education in Maryland, a distinguished educator, raised that point in regard to the ordinary public school courses, some years ago.

"It seems to me that, in both cases—the literary courses and the industrial courses—if the courses were really adapted to the child's development at each stage of his progression, they should be the best for him whether he goes on in school or ceases to attend.

"If he has learned to read and to write, and to do sums in arithmetic suited to his capacity; if the child has learned the Kindergarten exercises and has *begun* to draw or to sew, so much has been gained. The problem seems to me—I say it with all modesty in presence of experienced teachers—the same in each case; and that, if one preliminary course should have been given to the child leaving school at twelve and another to the one remaining till fourteen—then, in that fact, there is proof positive that the course was a bad one. At a later period, the period of trade or professional schools, other considerations and conditions exist; and a course arranged for two years and one arranged for three years, *might* wisely differ in the arrangement of the first two years' studies, though not necessarily.

"The second difficulty occurs when the public school pupil graduates from the Manual Training School.

"What is he to do? He knows no trade. How can he become a wage earning producer?

"It is my purpose to suggest, not to answer this query. He has reached the development when he should enter the shops or the factory. If these are to be closed to him, what resource is there, if he is ultimately to be a skilled producer, other than a technical trade school which will turn him out, not an apprentice, but an expert workman; or he must go to a Professional Technological Institution from which he shall graduate as a scientific director of labor, a skilled engineer, etc.

"That eventually these Trade Schools may exist as free public institutions, as are some of the Technological Institutions now attached to State Universities, is not, therefore, an unimaginable contingency."

The interesting story of Miss Huntington and the Wilson Mission School, with the striking outcome of the present Industrial Education Association of New York, was recited; followed by an account, somewhat in detail, of the recent experiments in introducing industrial training in the public schools of Washington; the latter as matters of interest to the visiting members of the Association. The need of specially trained teachers to introduce the new methods was emphasized, and the interesting phenomenon of the evolution of this National Association from such modest beginnings as the Mission Cooking School established by Mrs. Woodbury, referred to.

The speaker, mindful that most of the visiting members were the founders of private mission schools and other instrumentalities for lifting up the neglected classes, closed as follows:

"If I have seemed to some of you to have had reference to the public schools in my remarks rather than to the private schools and the sporadic individual efforts of those who, first, in every community, have had the energy and courage to attack with these new weapons the strongholds of ignorance and idleness, wherein poverty and prejudice sit entrenched, I beg to assure you that this has arisen from no lack of appreciation of the heroism and self-sacrifice of these modest workers.

"In the division of labor that inheres in our form of society, the experiments are at the cost of individuals, the effective work of providing for the general needs of a community can only be undertaken by that community as a whole. This may be set down as an axiom, in America, at least.

"Now, I would suggest that what is true as to the best methods for public schools must be equally true of all other schools for pupils of equal age and advancement; so far as sound principles of the science of education underlie these special applications of that science. So that, in speaking of one class of schools, I am including all of that class, whether public or private.

"To the large-hearted, public-spirited pioneers, the Christian women and men who, inspired by love and compassion, have gone down into the slums of great cities, the crowded quarters of manufacturing towns, to carry to the neglected little children something of light and life, who have let in God's vivifying sunlight of knowledge to gladden and illume their darkened lives, be all honor and praise, and reverence! In listening to the recital of their unselfish labors, who can fail to hear the heavenly music of those words spoken by the Galilean so many centuries agone? 'Inasmuch as ye have done it unto one of the least of these, ye have done it unto me!'"

Prof. R. B. Warder, of Howard University, who had taken great interest in this movement, then read the following paper, prepared by Mrs. Woodbury, giving an account of the School of Cookery. Professor Warder had also himself prepared a paper giving an account of industrial training in Bavaria, where he had passed a year in studying the industrial educational systems of the country, which he was to read later; but so much interest was aroused by the papers read by the ladies that there was no opportunity for presenting this paper.*

THE FIRST MISSION SCHOOL OF COOKERY IN WASHINGTON, DISTRICT OF COLUMBIA.

By Mrs. Anna L. Woodbury.

The first Mission School of Cookery in the city of Washington was established eight years ago, for the free instruction of young girls in cooking. This name was given to it because its work was really at that time a mission one, for very little interest was taken in Industrial Education, and schools of cookery especially were regarded with distrust. Two classes were formed, and as the introduction of cookery into the public school system was one of the chief objects for which the school was established, care was taken to include some girls from the public schools. These interested their friends, and when the school was opened the following year more little girls applied than could be admitted. Classes were invited from St. John's Orphanage, the Orphan Asylum, St. Mary's Industrial School and Wayland Seminary. The class from St. John's Orphanage came for two years, and those from St. Mary's Industrial School and Wayland Seminary for four and five years. In the spring of 1884 the school was one of six industrial schools which gave an exhibition and lunch at Willard Hall, and the following spring an exhibition of cookery was given in the class room at the close of the term. Every year one or more classes were formed of pupils from the public schools, and it was impressed upon their minds that quite a responsiblity rested on them, as their success or failure would have great influence in the future.

Two years ago the first classes were detailed during school hours, and they were so much interested that when it was decided to open four public schools of cookery hundreds of girls were eager to attend them. The school is now a normal one, and there are five classes detailed, which come every week through the school year. There are ten normal pupils and four model classes, each containing twelve girls. As there were no text-books, I was obliged to arrange a course of lessons when the school first opened, and have since revised and enlarged them. They enable a teacher to instruct a larger number of pupils than she could when obliged to depend upon her own memory.

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* This valuable paper, entitled "Agricultural Education in Bavaria," will be given in one of the Appendices to the account of The Land Grant "Colleges of Agriculture and the Mechanic Arts."

The young ladies who have charge of the classes in cooking at the public schools were trained as teachers by this method, and they have three classes a day with from twelve to twenty girls in each, making about two hundred in all for each school. The classes follow each other in rapid succession and the lesson is limited to two hours. A short dictation is given with the recipes for the dishes that are to be cooked, and the girls who are to do the cooking for the day are designated. When the dishes are prepared they are given to the pupils, as we think that if they see how everything should look and taste when rightly done it will be a guide to them when practising at home. We try to give them a knowledge of the practical principles of cookery, and to impress on their memories many little facts which they could only learn otherwise by years of experience. Each class leaves the room in perfect order, and ready for the next class. The important points which we are interested in settling are these: Can schools of cookery be made self-supporting? Should hygiene and chemistry be taught in them? Can schools of cookery be made a success?

We had first a general order kitchen where brown bread and other things were made, and afterwards a cake department connected with the school, and although we had a large custom through the kind interest of friends, they never did more than pay their own expenses, because so large an outlay was required to carry them on. They have been of great use, however, in making the school known and in awakening an interest in Industrial Education. The Washington School of Cookery, which was a paying school for ladies, shared our rooms for several years, and when it moved to Fourteenth Street the general order kitchen went also, as it could be made much more profitable in a private school, where a portion of the expenses would be saved. Three years ago we began to take some paying classes, and have had quite a number, including two classes sent by the trustees of the Miner fund. They have paid their own expenses and have given a little toward the rent of the house. It seems to me that free schools, if not too large, can be made in time self-supporting, or nearly so, especially if they are in a building where the rent is shared by other industrial schools. I have myself always felt very strongly that hygiene and chemistry should be left to the regular schools, and that the kitchen schools should be kept perfectly clear of everything except practical cooking, which is, in itself, one of the most difficult and complicated of arts. In order to cook well a girl must know the difference between boiling and simmering; but she need not be taught what water is composed of in order to boil the potatoes well. Every moment is of value in these schools and can be well filled, and they should also be made as simple and inexpensive as possible.

Schools of cookery are much more numerous than they were a few years ago, and there seems to be no reason why they should not become a part of the school system; but perhaps the question, Can they be made a success? might be best answered by saying that eight years ago twelve little girls were formed into two classes at this mission school in the city of Washington, and now over nine hundred pupils of the public schools are being instructed in cookery by teachers who were trained there, and are also graduates of our normal schools.

Miss Annie Laws, of Cincinnati, one of the directors for the State of Ohio, whose modification of the Kitchen Garden has attracted much interest and attention, and has led to the establishment of similar schools in other cities, then read the following account of the experiments undertaken by herself and her coadjutors:

THE FIRST KITCHEN GARDEN IN CINCINNATI, OHIO.

BY MISS ANNIE LAWS.

In the question of Industrial Training, now occupying so important a place in the minds of all interested in educational matters, there is perhaps no department of more *general* interest than that of practical systematic training in the management of household affairs.

The need of this training is often as apparent in the homes of the wealthy as in the homes of the poor. Harriet Martineau says: "One reason why girls know so much less than they should do, and so much less than they wish to do about household affairs, is, that justice is not done them by *proper teaching.* Nothing is more easily learned or more sure to be remembered than the household processes that come under the hands of women, but then they must first be *clearly understood* and carried through."

It was to meet this need for the systematic training of young girls in household affairs that Miss Huntington's system of Kitchen Gardening, which is the application of Kindergarten principles to domestic training, came into existence. Since the formation of the first Kitchen Garden Association in New York in 1880 this work has spread so rapidly and has become so widely known that it is unnecessary to dwell upon the details which are probably familiar to all. The wonderful evolution of this New York Kitchen Garden Association with its comparatively limited work and objects, into the Industrial Education Association with its wide-spread aims—its training college for teachers, its model schools, kindergarten library, musem, courses of lectures, etc., leads to the belief that other important results may follow from the rapid increase of these schools all over the country.

As the first Kitchen Garden established in Cincinnati was something of a deviation from Miss Huntington's system, and as it has attracted some attention from various places and has been the means of aiding in the formation of many Kitchen Gardens in other places, a brief account of its origin and work may not be uninteresting.

A committee of ladies in the Cincinnati Free Kindergarten Association was formed in the spring of 1880 for the purpose of investigating Miss Huntington's Kitchen Garden system of work. Two of the ladies visited New York, bringing back with them Miss Huntington's Manual and an enthusiastic account of the work as they had seen it exemplified in the Wilson Mission School. Nothing was done, however, until the next fall, when a number of young women, myself among the number, met together to decide whether it would be practicable to undertake to start a Kitchen Garden. We decided that as Miss Huntington's Manual seemed very explicit, and we had some very good housekeepers among our number, we would venture to study the lessons without going to the very great expense involved in sending to New York for a trained teacher. We sent, however, to Schermerhorn's for a complete outfit of Kitchen Garden material. We decided to withdraw from the Kindergarten Association, as we foresaw there would be difficulty in arranging financial affairs satisfactorily, and we did not wish to involve that Association in an undertaking that might not prove successful. After carefully studying Miss Huntington's Manual and experimenting with the miniature household outfits, we finally decided to make several changes. In place of having a class of twenty-four girls directed by one teacher and going through the various exercises with chords of a piano, we decided to give each teacher a class of eight or ten girls to make the work with the toys as much like the *real* work as possible instead of simply an attractive exercise; to have the teachers talk with the children not only about the details of the lesson but of themselves, of their home lives, etc., and to encourage them to put into practice, as far as possible, what they were learning. Instead of a *game* "Waiting on Door," we decided to have a little waitress open a real door when the bell rang, and put the instructions given her into practical operation, instead of the broom exercise. We tried to arrange that the classes in turn should have some real experience in handling a broom, etc., and so with the various lessons.

The general arrangement of our school was as follows: Six tables, each with a teacher and eight pupils, one director and a pianist. The school sessions were held on Saturday mornings from half-past nine until 1, the teaching being all voluntary. From 9.30 to 10 the whole school united in general exercises. Songs were sung, a waitress for the morning selected and her duties rehearsed; then came a general talk on matters important or interesting to the whole school; from 10 to 11 lessons with the toys; from 11 to 12 sewing; at 12 work was put away and a few of the most interesting of the Kindergarten games and songs played and sung while a luncheon of milk and rolls was prepared. After luncheon the school was dismissed. Working as we did among the children of the very poor the luncheon was much appreciated. Gradually, as opportunity came, one large completely furnished apartment after another was added, until at present we have, in addition to five classes at work with the small toys at the tables, two classes in the laundry, one washing and one ironing, a class in the cooking department, one in the dining room and one in the bedroom. The cooking department we feel is rapidly becoming the most important part of our work.

THE "KITCHEN GARDEN" JOURNAL.

So many letters of inquiry came to us in relation to this work, and there seemed so much interest manifested and yet so little knowledge as to how to go to work, where information might be obtained, etc, that we finally decided to embody our experience and whatever knowledge we possessed on the subject of Kitchen Garden, or household training for girls, in the form of a little bi-monthly journal which we called simply the "Kitchen Garden." This has been the medium of not only carrying our experience to others but of bringing theirs to us, and making little or no effort to enlarge the circulation. simply sending the little paper wherever it seemed possible to do any good, for the little paper has been altogether a missionary, not a mercenary enterprise, all the work on it being entirely voluntary. We have been surprised to receive demands for it from all over the country, from Canada to California, and last year for the first time it paid for itself.

We have been asked sometimes if Miss Huntington objected to our carrying on the Kitchen Garden work in our own manner. After her first doubts of the successful working were overcome, we are happy to say, Miss Huntington has given us every encouragement in her power.

SIMILAR EFFORTS IN ENGLAND.

A package received from her a few days ago brings a number of English papers called "Little Women," a monthly paper devoted to the interests of the Housewifery Association, or English National Society for Giving Instruction in the Principles and Practice of Housewifery. This is another instance *when* the *small beginning* of a Kitchen Garden has resulted in something larger. An English lady who visited Miss Huntington's school carried back with her to England various manuals, pamphlets, etc., started a Kitchen Garden, and thereby awakened an interest, which has finally culminated in this Association, which is to have under its auspices a regular training house, in which there will be the following departments: First, the domestic kindergarten, (Miss Huntington thinks it might possibly have been better if she had called her work by that name instead of Kitchen Garden). In this will be the methodical daily work, first taking the girls through the day's work; teaching weekly duties or washing, ironing and house cleaning; and then supplementary duties, such as marketing, cooking, clothing, etc., all taught by means of small models of requisities. Secondly, a junior course, or advanced practical lessons upon the same system for older girls. Thirdly, a senior course, for imparting a scientific knowledge of housewifery, hygiene, and sanitary subjects to young women.

Miss Huntington says in the letter accompanying the package: "I feel that your paper is doing so much good and wish I could be of more service to it and to you, who are working so faithfully to keep up the enthusiasm in home work and home life and refinement. We know the character of a home tells strongly upon the moral and religious tone of the family, and everything that lifts and refines and sweetens it, is work for God."

Several other Kitchens have been started in Cincinnati in addition to, and as a result of the one of which I have spoken. One is held in one of the churches; in this one the pastor has kindly consented to allow his study to be transformed into a temporary bedroom; one of the class rooms is used as a dining room, while the kitchen of the church serves as an admirable laundry. One of the others is supported entirely by a wealthy lady, and in this school the children of the wealthy are as welcome as the children of the very poor, and all alike seem to enjoy and profit by the work. One distinguishing feature of this Kitchen Garden is the nursery department, in which the young girls are taught practically to care for and amuse the little one. There is a cooking department, and also two laundries in this Kitchen Garden.

A cooking school under the auspices of the Cincinnati Women's Church Association has been training several classes of public school children in cooking. Several of our private schools have added courses of cooking to their other work, and we hope in time we shall have the work of domestic training fully established on scientific principles and available to all.

Mrs. Ellen B. Dietrick, of Covington, one of the directors for the State of Kentucky, then read a most interesting account of her experiences in that city. It is interesting to observe how here, as well as in other places we have noted, one effort led to others till a whole group of instrumentalities is seen to have grown out of a single modest effort at the practical improvement of conditions.

Interesting instances were given by Mrs. Dietrick of the good results to individuals who had been taught to *do* something. These are here necessarily omitted.

Mrs. Dietrick began as follows:

INDUSTRIAL EDUCATION IN COVINGTON, KY.

By Mrs. Ellen B. Dietrick.

A chain of circumstances which I need not here explain led me some ten years ago to begin the study of life among the working people and paupers in our city, which numbers about forty thousand inhabitants. I have in that time made over two thousand visits to the poor of every grade, from the high-school graduate who offered to teach my children music for twenty-five cents a lesson and help them practice into the bargain, down to the pauper squatter in our suburbs who lived with his family of ten in one room and sometimes took a lodger to help pay expenses.

As soon as these people realized that some one was willing to hear them, of course for every one that went away ten new ones sprang up. And in ninety-nine out of every hundred cases, as others report, the trouble was not to find work to be done, but to find workers properly trained to do the work. I passed successively through the stages of alms-giving, temperance preaching, ragged school teaching, and asylum founding, only to become more and more deeply rooted in the conclusion that the one possible solution of the problem of the poor is industrial education, beginning with free kindergarten work in all our public schools, and leading up through all grades to the school of technology, which should embrace technical training for girls as well as for boys.

Our Kitchen Garden, founded six years ago after the one you have heard described by Miss Laws, has accomplished similar results, and has so far done good, particularly the classes in sewing and cooking. But so great was the pressure from women of every age, that three years ago we formed a Women's Educational and Industrial Union, whose especial object has been to afford women and children opportunities for special training in a variety of ways, as well as to establish a permanent medium of communication between all women, without regard to class or barriers of any sort.

Taking in the already flourishing Kitchen Garden, the Union started with a day nursery, free kindergarten, employment bureau, and free reading room, and after a year classes for women were formed in cookery, penmanship, embroidery, wood carving, gymnastics, free-hand drawing, stenography, dress cutting, etc. * * *

Our pupils have good places begging for them faster than they can be prepared for the places. * * *

I have endeavored briefly to give you a mere suggestion of the work done in a short time, a work which, though still in the experimental stage, has proved to me that the solution of the labor and the temperance questions lies not in preaching and in prohibition, but in improving the lives of the poor through free industrial education.

Before our work began there was only one public charity in our city; no associated charities, no reading-room, no place of lodging but the station-house for strange and poor women temporarily in need of shelter. There were hundreds of "squatters" in the suburbs, who spent all their time in street begging. From our beginning have grown the branches I have named; also an incorporated Home for Aged Women, a Mission House of Industry in the worst of the suburbs, and a mission church.

Prof. W. P. Mitchell then read the following account of the Industrial Education experiments at Howard University:

INDUSTRIAL EDUCATION AT HOWARD UNIVERSITY.

By PROF. W. P, MITCHELL.

The invitation to attend this meeting and add something to its interest gave me my subject by the simple suggestion that "I tell what we are doing at Howard University." I suppose, of course, in the line of Industrial Training, Howard University, as an institution of learning, has a history in connection with the development of the colored people; which development at the present time is all that their best friends had any right to expect it would be.

The addition within five years of an Industrial Department was the result of a variety of circumstances, any of which would have justified it.

There are persons in the community who confound the Industrial Schools of to-day with the Manual Labor Schools of forty or fifty years ago. But there is an essential difference: the Manual Labor Schools were chiefly agricultural, and their main object was to make it possible for poor young men to obtain a liberal education by giving their labor as an equivalent for collegiate or academic instruction. Some of these still exist, but the Industrial School of to-day is a very different thing and of no immediate pecuniary advantage, except in rare instances. They can be organized to advantage anywhere, but require some capital.

Before general public interest was expressed in Industrial Training the subject had received some attention at Howard University, but the way did not open for its practical exemplification.

It was known here as elsewhere that the old system of apprenticeship to trades was dying out, and that in addition to this, so far as the colored people were concerned, a wicked and cruel prejudice gave the colored youth little or no opportunity for learning trades or obtaining a knowledge of any handicraft.

PECULIAR CONDITIONS AFFECTING THE COLORED PEOPLE.

The colored people are, as a rule, in poor circumstances, and while slavery gave us a few good mechanics, they were commonly not so situated that they could afford to take apprentices. These reasons, in addition to others with which the public are familiar, indicated a peculiar fitness in the opening of an industrial department at the university. Accordingly five years ago such a department was organized at an expense the first year of something over $3,000, the expense being met by old friends of the colored people. Since the opening of the second year Congress has, by appropriations, met a large part of the expense, but it is still necessary to raise annually by solicitation more than $1,200. Ours is a modest profession: to fit the colored student, while acquiring a liberal education, to some mechanical pursuit that will enable him upon his leaving the university to make a living at once, or, as one of the papers expresses it, "To face the world and get a living."

PURPOSE OF THE EXPERIMENTS.

The standard of the new departure was simple; it was to teach the use of mechanics' tools to the students of the normal and preparatory departments of the university. These comprise a majority of the students, and generally such as are least likely to follow the college course clear through. It was decided that attendance upon the new department during prescribed hours should be compulsory. So with this simple organization our work begun. We have printing, shoemaking, carpentering, tinsmithing, tailoring, and type-writing, and for the girls sewing and part of the time cooking. The last would seem superfluous, for as Mrs. Stowe says, "The colored people are born cooks." At these occupations we spend fifteen hours a week, the classes being arranged to avoid interference with the literary departments to which they belong. Of this number of hours three on Saturday have been devoted to a class of newsboys from the city. My experience has shown me that boys twelve years of age are old enough to commence learning the use of mechanics' tools. As the conducting of an industrial school was new to us all, we had everything to learn in connection with it. I made up my mind at the beginning that as soon as possible each boy should make something not for its intrinsic value, but that the creative faculty, so to speak, should be brought into exercise for the boy's encouragement. I think this was a right conclusion. Our first work was making a board walk, our next was making footstools, or crickets, as they are sometimes called.

RESULTS ACHIEVED.

From these beginnings we have gone right on, until at the end of four years they earned during their summer vacations half wages, such as are generally paid apprentices just out of their time.

In printing we entered at once on the compositor's work of a little paper, which we publish three times during the university year. At the end of the third year this paper was gotten out by our boys without other aid, and each year so far several of them during the summer vacation have found employment in the small newspaper offices of their own people in the city of Washington.

Shoemaking enabled them to keep their shoes in repair, and more than half of them by the end of their first year had made a pair of shoes each for himself. I regard this as one of the best trades. Bearing in mind the thought that the creative faculty should be aroused, I add that it should be steadily stimulated. I have always encouraged them to make toy furniture, sleds, brackets and household articles, believing that a boy will learn to make a carpenter's joint just as well when manufacturing an article of furniture for his own home as when making a joint by itself. I emphasize this thought, for students in an industrial school have to have enthusiasm and personal interest in their work.

One of our first classes in printing was composed of girls. At first they set up type and distributed them again immediately. At the end of a week one of them inquired of me, "When are we going to set up anything that will stay?" Here it was, the desire to see in print something that she had done herself. All that we have done at Howard University in the direction of Industrial Training has been done while the students were making fair progress in their studies. When we take into consideration that many professional men fail and that all have not the gift of teaching, we aim to furnish them the means of getting a living. There is a line of argument concerning these schools the theory of which is interesting and perhaps forcible, which however reminds me of the old line of argument for high schools, where those who argued for them seemed to forget that the public schools were established for the poorer class, while those who have had the most advantage from the addition of high school have been the class who were able to keep their children in school a long time, besides obtaining for nothing that for which their property would be taxed anyhow. The public schools are better to-day than ever before, and I regard the introduction of mechanical trades as a further step in advance. There is many a father who, if his son is learning to use his hands and to fit himself to get a living as soon as he leaves school, will make an effort to retain him there. At Howard University we have very little machinery; our idea is to cultivate the use of the hands. We have already quite a number of young men who earn a living in vacation by the knowledge gained here of using their hands with dexterity.

INDUSTRIAL TRAINING—A STEP IN DEVELOPMENT.

I regard this as the third step in the development of the colored race. First, we had to provide food and clothing for the freedmen; next, the simpler form of free schools; now we add to these what in our experience among our own race has taught us is best for the people—a knowledge of the use of tools. The class of mere children, newsboys and others who are obliged to do something for a living even now, and are almost necessarily deprived of school privileges, will know something of the use of tools, and this will raise them above the grade of waiter and bell-boy. We have about thirty of these, a rough, good-natured set, neither better nor worse than the same class of white boys.

These boys, many of them, sell "The Star," for which they pay one cent and a half, and sell upon an average one dozen per day and realize a dollar a week. They do not earn enough to afford a lunch, and now and then, when we have given them cakes at noon, the avidity with which they receive the food is actually painful. The boys are sent to us by the Newsboys and Children's Aid Society. They are types of a considerable number in the city, who are prevented from attending school, except the night schools. There ought to be an industrial school, *which shall combine with it a simple primary school*, and be open all day, so that this large class of boys shall attend at hours *suited to their convenince.* Our first year with this class showed them to be wanting in punctuality and to be of a character which is described as trifling, but strange as it may seem we have found among them a moral power existing, especially when the creative talent is brought into exercise. Some of these little hoodlums who bawl out the names of their papers of a morning or evening, are going to be carpenters and shoemakers one of these days.

RESULTS SUMMARIZED.

This, then, is what we are doing at Howard University: taking from the students proper of the University none of the time they should spend at their studies, but giving them an opportunity to learn enough of a mechanical trade to earn a living, and without losing any time to become in a year after leaving the institution fair journeymen; putting into the hands of the news boys the means of elevating their condition, and teaching both classes the dignity of labor. * * * Those who think of establishing industrial schools may as well dismiss from their minds all thought of their being money-making institutions; on the contrary, they are at first costly, and I doubt whether it will be right for a long time to bring the labor of the industrial schools into competition with the work of men who have families to support. Let us treat the industry, upon its introduction into our school system, just as we would any other branch, such as French, or the study of the Constitution. We have found at Howard University at this stage of our progress that many an hour of voluntary labor in our shops is taken cheerfully from times of recreation. Base-ball and foot-ball may suffer, but the curriculum of the college or academy is not interfered with; and while the system of mental discipline adopted is as good as that of Yale or Princeton, this industrial training is found to be in harmony with it.

One word more and I have done. We have found that industry is a power in moral discipline, and one of these days it may be discovered that the simple arousing of the creative faculty may accomplish in children that which blows and rough treatment fail to bring about, teaching not only self-support but self-control as well.

The reading of these practical papers aroused a lively interest, and the author of each paper was, at its close, eagerly questioned on the topics treated or suggested; and, in this way, many facts were elicited which, owing to the modesty of the readers, has been omitted. The rapidity with which a successful experiment in one city or town had been undertaken in another place as shown in these papers was most interesting and encouraging. It is because the methods of training which have proved so successful in these private schools and classes are of value, either as models or as suggestions, for those engaged in the public schools, that it has been thought desirable to quote the extracts from these papers which are here given. The result of this meeting, which brought together the members from several States, has been to stimulate the further development of the Association, and it is now proposed to endeavor to establish under its auspices, in the city of Washington, a Manual Training School for the instruction of teachers of Industrial Education.

Hon. Arthur MacArthur, President of the Association, having declined, the presidency is, for the moment, unfilled. The Vice-Presidents are: Mrs. A. S. Woodbury, of Washington, D. C. (acting President); Mrs. S. T. Hooper, of Boston, Mass.; Hon. John Eaton, President of Marietta College, Marietta, Ohio; Mrs. B. A. Vaughan, Mississippi; Hon. William B. Webb, Commissioner of the District of District of Columbia.

Secretary, Miss Louisa Breedin, Washington, D. C.

Treasurer, Mr. Ross Fish, Washington, D. C.

Among the members and State Directors are—Mrs. Ralph Dunning, of Georgia; Mrs. Mary Gansy, of Illinois; Mrs. Ellen B. Dietrick, of Covington, Ky.; Miss Vaughan, of Mississippi; Mrs. Romer, of New York; Miss Josephine Bennett, of New York; Miss Annie Laws, of of Cincinnati, Ohio; Miss Southworth, of Cincinnati, Ohio; Mrs. Holmes Conrad, of Virginia; Mrs. Thomas M. Talbot, of Washington, D. C.; Hon. Arthur MacArthur, of Washington, D. C.; Professor

Fay, of Washington, D. C.; Prof. R. B. Warder, of Washington, D. C., and others.

THE NORTH BENNET STREET INDUSTRIAL SCHOOL, BOSTON, MASSACHUSETTS.

The following account of the work of this school, to which frequent reference has been made in this Report, is compiled from a brief report published by the Managers in April, 1886, and from the historical pamphlet and report issued in April, 1887.*

From these it appears that it was first established as a benevolent institution, in the attempt to serve the needs and relieve the necessities of a poor neighborhood. It was soon seen by the Managers that some forms of help undertaken for adults were impracticable, and that the only way to effect permanent good was by giving instruction to the children, and the plans and methods of the institution were modified accordingly; the changes all being in the direction of providing greater facilities for varied industrial instruction, while, with the same practical wisdom as was shown by the Wilson Mission in New York when they formed "The Boy's Club," the needs of the children for recreation, as well as for employment, were recognized and provided for.

This interesting and remarkably successful experiment in aiding to self-help, without impairing self-respect, has attracted wide public attention, owing to the connection which was early established by its managers between its industrial classes and the public schools of the city. By means of these classes the school authorities of Boston have had opportunities of thoroughly trying some forms of industrial training, classes being sent, at stated times, from the public schools to this building to receive the special instruction desired.

It is for this reason that this school is entitled to record in this volume.

In the spring of 1886 the building was seriously injured by a disastrous fire; arrangements were, however, made for the continuance of the classes, and in the rebuilding of the building desirable changes were made.

The following detailed account of the various classes is from the report of 1886:

> The frequent inquiries concerning this institution suggest to the Managers that some account of its aims and the results thus far accomplished will be interesting to the public, especially as within the last two years the work done here has assumed larger proportions and undergone radical changes, which are indicated by the change of name from that of the North Bennet Street Industrial Home, by which it was formerly known, to its present title, North Bennet Street Industrial School, under which name it was incorporated in 1885. * * *

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* This report is entitled "The Work of the North Bennet Street Industrial School, from 1881 to 1887." Boston: Rand Avery Company, Franklin Press. 1887. Pp. 19.

GREAT NEED OF TECHNICAL INDUSTRIAL TRAINING.

One of the first lessons learned here, as elsewhere, has been that the inability to do anything well is the cause of most of the poverty and much of the crime in the world; hence to give industrial training, with all its invigorating and educating influences, to those who are both willing and young enough to learn, has become the first, but not the only aim of the work. The providing of means for safe and healthful social enjoyment, so necessary for the young, is still one of its important features. Employment is also given, in the cleaning of the large building, to a corps of about twenty women, for whom it would be very difficult to find regular work at a distance from their homes. It is also intended that the superintendent shall stand, as heretofore, in the relation of a friend, not only to the pupils, but to all who may apply to her.

To give that help to the community which shall act as a preventive of some of its worst evils—in other words, to teach a generation how best to carry its own burdens by the natural and intelligent development of its own God-given powers, is, as has been said, the first object of this work, and to some account of that this report will be chiefly devoted.

VARIETY OF TRADES TAUGHT.

There are at this time forty classes of girls and boys between the ages of nine and sixteen years, who are sent from the public schools to this building for instruction in carpentry, printing, shoemaking, clay modelling and cooking. Each class comes for two hours a week, during school hours and under school descipline. The hours are from 10 to 12 a. m. and from 2 to 4 p. m.

In addition to this, are volunteer classes in some of these departments on certain afternoons of the week from 4 to 6 o'clock. The whole number of pupils found in these different departments during each week is about 600. Some of these pupils are from the School for the Deaf. They highly prize this opportunity, and to them the training is of especial value.

On Saturday, both morning and afternoon, there are classes of girls in sewing and dressmaking, 58 now in attendance. On five evenings of the week classes of young women, 47 in all, who are otherwise occupied during the day, are taught to cut dresses and other garments by chart measurements. These pay a small sum for their lessons, and there is a constant demand for places in these classes. This department is in the hands of a very efficient teacher, and the results are practical and satisfactory.

The carpenters' shop has been refitted with separate work-benches for 12 boys, provided with good tools, and a teacher has been secured who has had valuable training for his work in the Institute of Technology. The work of this department is now established for the first time on a scientific basis; it is thorough and progressive, beginning with the first principles of construction, taught with the least possible waste of material, and going on by regular steps to lathe-work and wood-carving. Here are ten classes of boys weekly, and one class of girls.

The printing office is under the care of the teacher who has held the position for three years. This is one of the most popular departments, and both boys and girls have found renumerative employment as a direct result of the teaching received here. The execution of order work in great variety is possible, without detriment to the instruction, and aids materially in making this department partially self-supporting. Here are thirteen classes a week.

The shoe-shop is also in the hands of the same thorough workman who has hitherto proved himself so good a friend to a large number of North End boys, and who works with the same devotion to the cause which he has shown for three years. Large orders for this department are desired, as the course of instruction involves the use of much expensive material, which can be utilized to fill orders for good work at moderate prices, assistants being employed to prevent neglect of the educational side of the work. There are thirteen classes a week in this department.

The cooking school has been organized this year on a wholly new basis. It has been fitted up in such a manner that each pupil has a separate gas stove and cupboard for utensils, similar to those now in use in the Tennyson street school-house. Each pupil is responsible for her own utensils, and works out her own receipts, which include among other things the making of nourishing soups, well-flavored stews and good bread; learning in short, by actual practice, how to prepare any material she may have to the best advantage. Lessons in general housework, in judicious marketing and in the simple chemistry of cooking are given. The nutritive value of different articles of food is to be illustrated by means of graphic charts and a small museum of specimens, prepared under the direction of Mrs. Richards, of the Institute of Technology. There are in this department nine classes weekly, of fifteen pupils each, from the public schools, and it is hoped soon to add a class of women.

UTILITY OF MODELLING THE CLAY.

The clay-modelling department is the latest addition to the work. It is in the hands of a most enthusiastic and efficient teacher, whose work has only to be seen to show how great is its educational value in developing the powers of mind, hand and eye. Very little observation of this work shows the wisdom of those French watch-makers at Besançon who require their apprentices to model in clay the various parts of a watch before they attempt the delicate work so easily ruined by clumsy fingers. The advantage and the possibility of early training in accuracy of observation and manual skill, are, perhaps, more easily seen in this than in any other department. Here are 87 pupils weekly, many of them deaf.

SOCIAL FEATURES.

During four evenings of the week the amusement room is open, where boys from the neighborhood enjoy themselves in playing games, under judicious supervision, which is often a volunteer service. Contributions of good games are much needed.

THE LIBRARY.

The library, of between eleven and twelve hundred volumes, is especially prized by the boys and girls of the neighborhood, who are allowed to take out books at an earlier age than at the public libraries. The reading room is open, and is used every afternoon and evening excepting Saturday and Sunday. The average daily attendance for the last six months has been 84. More good books, especially those with illustrations, are much needed, and young people could hardly find a better disposition for books which they may have outgrown than that offered by this library.

Two evening classes in drawing, for the older boys and girls, have just been formed on Monday and Wednesday evenings at 7 o'clock.

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KINDERGARTEN INSTRUCTION.

The school includes a day nursery and kindergarten. The nursery prepares children for the kindergarten by its simple work and play, and by careful attention to habits of order and cleanliness.

In the kindergarten industrial training begins. Through frequent exercises in building, designing with tablets and sticks, drawing, clay-modelling, sewing, weaving, paper-cutting, etc., the eye and the hand are trained, and habits of accuracy and industry are formed.

COMPREHENSIVE USEFULNESS OF THIS UNDERTAKING.

The whole number of women, boys and girls who now come under the influence of this work weekly is about 900.

The building 39 North Bennet Street is admirably adapted to the work, both from its ample size and location. It is in a crowded part of the city, conveniently near to several public schools, from which the classes can be sent to its different departments; it is easily reached by street cars of the East Boston and Chelsea Ferry line, which make it accessible to both pupils and visitors from all parts of the city. It has been bought and well equipped by a few friends of industrial education, who have placed the work on a sure foundation, and made it possible for it to go on. The owners of the building are Mrs. Quincy A. Shaw, Mrs. A. Hemenway, Mrs. J. H. Wolcott, Miss Anne Wigglesworth, Miss Ellen Mason, Mrs. David Kimball, Mrs. Henry Whitman, Mrs. A. Wheelwright, Mrs. G. S. Curtis, Miss Ida Mason, Robert Treat Paine, Esq.

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It is hoped that the day is not far distant when the public schools of Boston will assume such parts of this work as may be deemed feasible and of universal use. Meanwhile the North Bennet Street Industrial School is rendering an important pioneer service in showing the possibility and the value of early manual training on a somewhat larger scale than has yet been attempted for pupils of the age of those now attending these classes.

The Managers are satisfied that not only has some good manual training been given, but that important steps have been taken during the last year toward implanting a heathful pride in skillful work, as well as a respect for honest labor, which is its natural outcome, and a lesson much needed by all our young people.

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The announcement was made that "Miss Emily P. Rudd, late principal of the Bloomingdale School, Chelsea, has recently been made superintendent of the whole work." I am indebted to the courtesy of Miss Rudd for copies of the reports, etc.

THE BEGINNING OF THE SCHOOL.

The building now known as the North Bennet Street Industrial School was first hired on a short lease, for its present use, in June, 1881, and several departments of work were at once organized. There was an intelligence office, a loan and relief department, and a laundry. Sewing was given out to a small number of women; the day nursery and kindergarten were established, and there were small classes in carpentry, shoemaking, cooking, and printing; these classes could only be gathered together, however, after school hours and on certain evenings, and the attendance was irregular and never wholly satisfactory.

SUCCINCT HISTORY AND REVIEW OF WORK DONE.

An account of several changes, of departments given up for various reasons, mostly that the work had been undertaken by other societies, which follows, is here omitted. The report proceeds:

With these exceptions and some other changes of methods in the sewing-room, owing to the general introduction of sewing into the public schools, all the original work, with many important additions, has been continued, with a constant and successful effort to give it greater educational value and to reach a steadily increasing number of persons.

The work has grown and gained enormously, both in quality and amount, as was almost inevitable in any undertaking begun with the earnestness and devotion which characterized this work in its earliest days. To those who may have been disappointed, however, by the changes, feeling that its original aims have been, in a measure, set aside, we would like to say that the work, as it is now carried on, is intended to include all that which, after careful thought, proved to be valuable, except where it was seen that this could be better accomplished by other organizations.

To secure regularity of attendance, and to increase the number of pupils sufficiently to warrant the necessarily large expense of any industrial school worthy of the name, great effort was made to obtain such action of the School Board as should make it possible for classes to be sent here for industrial training during school hours and under school discipline. The proposition was cordially received by members of the committee, and in September, 1883, before formal action was taken by the Board, boys from the Eliot School were sent for manual training to this building by permission of Mr. Perkins, at that time chairman of the third division committee. Boys from that school have been pupils here, with short interruptions, ever since, with the approval of their master, Col. Harrington.

In 1885 the order was passed permitting pupils of the Eliot and Hancock Schools, "whose parents or guardians so request in writing, to attend on probation" the Industrial School for two hours a week.

Mr. Dutton, of the Hancock School, has given to the cooking school, from the first, unqualified approval and support. Mr. Dimmick, of the Wells, and Mr. Meserve, of the Bowdoin Schools, have done the same; as have Messrs. Murdock and Eaton, of Charlestown, and Mr. Lincoln, of the East Boston High School, whose pupils have joined the classes more lately.

Mr. Murphy, Chairman of the committee on manual training, says: "In the beginning there were teachers who had misgivings lest the manual work would interfere with the proper school work. We find no such teachers now. All the manual workers hold good rank in their schools."

The connection of manual training with the work of the public school at once changed the estimation in which it was held by both parents and children, its recognition there giving it a dignity in their eyes, where it had before been regarded with little respect. The regular attendance of good numbers was at once secured, and the steady growth began, which enables us now to show large and satisfactory results.

In June, 1884, the lease having expired, it became necessary to secure the building in order to insure the continuance of the work; and to that end the purchase was made by the following friends of the cause: Mrs. Quincy A. Shaw, Mrs. J. Huntington Wolcott, Mrs. David Kimball, Miss Ida Mason, Mrs. Greely S. Curtis, Mrs. Augustus Hemenway, Miss Anne Wigglesworth, Mrs. Henry Whitman, Miss Ellen Mason, Mrs. Andrew Wheelwright, Robert Treat Paine, Esq.

In April, 1885, the North Bennet Street Industrial School was incorporated, when the owners conveyed the building to the corporation, receiving its notes to the amount of their contribution.

For four years classes have been sent from the public schools to the different departments in this building. They come from 10 to 12 o'clock in the morning, and from 2 to 4 in the afternoon, during five days in the week. The whole number so sent during the last school year is 878. Of these, 164 have been sent to the carpenters' shop, 142 to the shoe-shop, 124 to the printing office, 148 to the department of clay-modelling, and 300 girls will have had a course of twenty lessons in cookery during this school year, 150 of whom finished this course in February. Added to this, on certain afternoons and evenings and on Saturday mornings, there are "volunteer classes," not from the public schools, numbering 244 pupils weekly. This includes 75 in dressmaking and 50 in cookery, who pay ten cents an evening for the lesson, among whom are some school teachers, as well as those who are at work during the day in shops and factories, making a total of 972 persons who receive industrial training of one kind or another in this building weekly.

COOKING SCHOOL.

The teaching of cookery has received much thought and care; it is in the hands of a teacher of unusual intelligence. This branch of the work has had the benefit of the co-operation of friends outside its management, who have added to large experience much intelligent study of the subject; and it is safe to say that a course of instruction such as is now given in this cooking school would be a valuable part of the general education of any class of girls in Boston. Important practical results of this teaching are shown by class reports of work done at home; in one class the average number of repetitions at home of processes learned here being 61, as a result of only ten lessons.

A constant and successful effort has been made to prevent unnecessary expense in all departments; but perhaps the most striking results are shown in the cooking school, where the cost of material used in one lesson, once a considerable burden, is now reduced to an average of about one cent per pupil.

PRINTING OFFICE.

The department of printing is a popular one, and very practical results can be shown here, as both boys and girls have gone directly from this office to remunerative employment. One of the most recent of these cases is that of a deaf and dumb pupil, whose father took occasion to express not only his relief from great anxiety, but his grateful appreciation of the fact that his boy's permanent position in a printing office, with a good employer and the hope of advancement, was due to the unlooked-for opportunity found in this school, where instruction is freely offered to those who want to learn, and where there is time to teach even those laboring under peculiar disadvantages. The receipts from order work in this department more than pay the cost of all material used in it.

CARPENTER-SHOP.

The instruction in the use of tools, which has been here carried on by progressive steps—in some cases to wood carving—is of the very best, the development of the boy being the controlling motive, rather than the easy construction of showy evidences of his skill. The methods are substantially the same as those of the school of mechanic arts in the Institute of Technology, where the teacher of this department has had valuable training, in addition to a varied experience gained in nine years of practical work.

CLAY-MODELLING.

An admirable preparation for the use of carpenters' tools, as well as for all mechanical work requiring accuracy of observation and skilful manipulation, is found in the exceptionally good teaching of the department of clay-modelling, which is here given with a view to industrial rather than artistic training. The great educational value of this branch of the work is not generally understood, developing, as it does, eye, hand, and mind. This is especially noticeable with pupils not yet large or strong enough to use carpenters' tools, and the value of preliminary training in the modelling room is quickly recognized by the instructor in woodwork when older pupils come through that department to the carpenter's shop.

Twenty pupils in modelling are taught at the Horace Mann School for the Deaf, where a devoted teacher goes to her younger classes, to spare them the exposure of crossing the city. It should here be said that there are pupils from the School for the Deaf in most of the departments of this school, some of whom show marked ability.

SHOE-SHOP.

The usefulness of the teaching of practical shoemaking is self-evident, and the careful measurement and accurate cutting (in paper), which has here been lately undertaken, increases its educational value, while the lessons in stitching leather and in driving a nail straight will not be lost as preparation for various other crafts. Large orders for institutions are much wanted, as order work is an important help toward the support of this necessarily expensive department, and the best of shoes, both as regards material and workmanship, may be found here.

DRESSMAKING.

The classes in cutting and making dresses are carried on five evenings of the week. There are ten pupils in each class, and there is a constant demand for admission. Ten cents is paid each evening for the lesson, and fifteen cents towards the purchase of a chart.

LIBRARY.

The library is open from 4 to 6 and from 7 to 9 o'clock p. m. every day in the week except Sunday, and is enjoyed by an average of 94 children daily, most of whom are too young to be admitted to the public library. About two hundred volumes are taken out weekly, which could not be obtained by these children elsewhere.

VACATION SCHOOL.

For two years, during six weeks in summer, a large vacation school has been carried on. Most of the regular departments have been kept open, with additional occupations, such as sewing, knitting and crocheting, lessons in botany, designing, basket-weaving, whittling, weighing and measuring, with kindergarten occupations for the youngest children. An average daily attendance of 250 children was secured, with more than twice that number enrolled during the summer of 1886, and an effort will be made during the coming season to improve on all previous methods of employing this time of peculiar exposure to idle city children.

EVENING WORK.

Work and play and physical training are all considered, and on five evenings of the week a large hall and other rooms are open (and well filled) for gymnastics, military drill (under special instructors), games, music and social intercourse. Between 300 and 400 persons join in these recreations weekly, among them boys from ten to sixteen years of age, and on certain evenings girls and young women.

A girl's club has been organized, with a membership fee of 10 cents per month. Rooms have been fitted up simply and with little expense, partly by the girls themselves, and by the help of friends, who have sent furniture, pictures, books and other things tending to make a cheerful, home-like place, where young women may bring their work, sure of finding a sympathetic friend. They find also an atmosphere always pure and good and happy, which they thoroughly enjoy.

Here is a piano, and for the latter part of the evening music and other amusements are allowed. These girls, and others as well, have the advantage of the use of the gymnasium (as boys also have) on certain evenings of the week. A physician, much interested in this work, has pronounced these opportunities for physical exercise, and the much-needed rest and refreshment after the day's work, of incalculable benefit to these young women, some of them her patients, whose sedentary occupations in close rooms make them early victims to dyspepsia and other ailments.

On Monday evening a devoted friend meets a class of younger girls for lessons in sewing, followed by games and a variety of amusements.

MILITARY DRILL.

Another feature of the evening work is the military drill, which must be seen and watched to be appreciated. The effect of this on neglected boys is marvellous; and if outward self-control, prompt obedience, neatness and a wholly new sense that large numbers may work together harmoniously for the same object be ever worth anything anywhere, then this new effort will certainly make itself felt for good among the boys of the North End.

AMUSEMENT ROOM.

From thirty to fifty boys assemble in the large hall on four evenings of the week for playing games. They are met by several corps of young ladies or gentlemen, who pledge themselves to be present on certain evenings every week for this friendly service, in which lessons in fair dealing, truth-telling and a certain amount of courtesy and consideration for others are found to lurk, unsuspected, behind the delights of "ring-toss," "steeple-chase" or "Aunt Sally." This is a gay and noisy mission, but its hope is to overcome evil with good. A welcoming shout, on a dark night, of "Here come the nice ladies," from the sidewalk, so packed with boys that entrance to the house is difficult, tells a cheering story of friendly intercourse, which will ripen, it is hoped, into warm personal interest and influence.

LECTURES.

In addition to what has been described, a course of valuable lectures is now being given weekly, as a labor of love, by three physicians, to mothers and young women, on hygiene, emergencies and kindred topics. Some of those attending these lectures have shown a genuine and enthusiastic appreciation of their value, the result of which can hardly fail to make itself felt in the whole neighborhood.

Still another benevolent physician proposes to devote one evening of every week, during the summer, to examining and prescribing for any women and girls who may like to apply to her here.

A small sum is charged for some of these privileges, which is promptly paid, and there is no alms-giving connected with the work.

It is estimated that more than five hundred hours of instruction, and about two hundred hours of recreation, are furnished to more than fifteen hundred persons, at a cost of less than $1,000 monthly.

DAY NURSERY AND KINDERGARTEN.

The day nursery and kindergarten, with a hundred children, must not be forgotten, since it is believed that here, with songs, games and work in the various materials suited to the use of little children, the first steps in manual, mental, and moral education are taken, where the baby, with the clay in the little hand, is so evidently aiming at the same end, and receiving the same discipline and development, as the boy at his carpentry. Manual, mental, and moral, we have said; and thus it is that the three M's will come, in time, to widen indefinitely the field hitherto occupied too exclusively by "the three R's." To do this work in the best way, it has been learned that it must be made educational in the very truest and widest sense of the word. The utility of manual training is easily seen and generally conceded. Its moral value in ploughing up a fair field overgrown with poisonous weeds of idleness, to plant therein the fruitful seed of an awakened interest in that which is wholesome and invigorating,—an interest which books so often fail utterly to arouse,—this is less often considered; but, in taking classes from the public schools during school hours, the managers of this institution have felt the obligation to furnish to such classes education, and they hope to be able to prove to the public, as they are themselves convinced, that manual training has a directly educating and stimulating influence on the mind, and that at least some of its branches may be made the medium of purely intellectual training; so that it will, by and by, be seen to be feasible so far to modify the curriculum of the public school as to economize time and energy by teaching two things at once, or, rather, one thing by means of another. It will be found, for instance, that a good deal of chemistry is inherent in the best teaching of cookery; that reading, spelling, and punctuation may be made an essential part of the teaching of type-setting; that some of the laws of physics underlie good carpentry; while no better or more interesting "observation lesson" could well be devised than that furnished by the growth of yeast when planted in a measure of warm, moist flour,—the consumation of which is a loaf of good bread; and a mathematical proposition is none the less instructive when the problem is the feeding of a family well on the smallest possible sum of money. * * * The support of this undertaking has hitherto been assumed by a few of its devoted friends, but it has grown and is rapidly growing to such large proportions, that it is now necessary to ask for the more general co-operation of the public, who are invited to join with the managers in the study of a great problem, and to strengthen this work by annual contributions. In addition to what is already secured, it is necessary to raise about $2,000 annually.

The following report of the Treasurer is given because its details of the several schools and classes may be found not only of interest, but of use for comparison:

TREASURER'S REPORT.

Public school classes.

	Cooking.	Carpentry.	Printing.	Shoemaking.	Modelling.
Salaries	$758 41	$833 33	$700 00	$1,168 68	$576 00
Materials	86 76	200 42	227 02	825 62	23 00
Furnishings	140 65	81 82	47 10	3 18	15 29
Incidentals	2 59	12 53	12 78	5 78	3 80
Total	988 41	1,128 10	986 90	*2,003 26	....
Receipts	14 93	22 54	403 09	1,090 19	....
Net cost	973 48	1,105 56	583 81	913 07	618 09

Net cost of public-school classes, $4,194.01.

* Expense of shoe department includes $110 loss by fire, and stock on hand amounting to $210.

Vacation school.

	Sewing.	Carpentry.	Printing.	Shoe-making.	Modelling.	Extra classes.
Salaries	$121 00	$166 67	$140 00	$130 00	$60 00	$240 00
Materials	18 44	35	23 48	111 28	25	31 18
Total	139 44	167 02	163 48	241 28	60 25	271 18
Receipts	2 40	....	....	....	....	20 00
Net cost	137 04	167 02	163 48	241 28	60 25	251 18

Net cost of vacation school, $1,020.25.

Evening work.

	Drawing.	Library.	Military drill.	Gymnasium.	Girls' club.	Amusement.	Dressmaking.
Salaries	$12 00	$420 00	$27 00	$34 00	....	$2 25	$81 56
Materials	5 18	17 96	....	1 00	$1 27	....	25 10
Furnishings	31 29	38 21	124 85	133 09	28 97	5 30	11 46
Incidentals	....	13 75	1 32	....	2 10	1 00	....
Total	48 47	489 92	153 17	168 09	32 34	8 55	118 12
Receipts	....	....	....	....	1 90	....	126 21
Net gain	....	....	....	....	....	....	8 09
Net cost	48 47	489 92	153 17	168 09	30 44	8 55	....

Net cost of evening work, $890.55.

General house expense.

Salaries	$2,006 65	Supplies	$220 49
Fuel	609 74	Stationery	34 72
Light	242 85	Postage	37 96
Water	73 85	Incidentals	61 52
Cleaning	529 58		
Repairs	171 59		3,988 95

Receipts.

Cash on hand April 1, 1886	$2,115 94	
Fire insurance	9,603 00	
Rent from store	300 00	
Rent from public library	200 00	
Interest on deposits	99 20	
Interest on notes	1,342 53	
Contributions	15,050 07	
		$28,710 74

Expenses.

Repairs on account of fire	$12,528 88	
Repairs on account of public library	315 53	
Interest on notes of the holders of the building	2,100 00	
Insurance	239 59	
Net expense of school	10,093 76	
		25,277 76
Cash on hand April 1, 1887		3,432 98

These figures do not include expenses of the kindergarten and nursery below.

Expenses of North Bennet street kindergarten from April 1, 1886, *to April* 1, 1887.

Salaries	$1,270 50
Mothers' services	45 25
Furnishings	16 56
Repairs	11 25
Materials	12 61
Aid	9 94
Sundries	13.10
Total	1,379 21

Expenses of day nursery, 39 *North Bennet street, from April* 1, 1886, *to April* 1, 1887.

Wages	$1,636 20
Provisions	651 84
Fuel	168 63
Light	16 46
Water	12 31
Furnishings	76 77
Repairs	92 35
Total	2,654 56

There are nine by-laws. The following are those of special interest; the others follow the customary forms:

BY-LAWS (as amended).

I.

The Association shall consist of the persons named in the act of incorporation, all Officers of the Association and those persons who are now part owners of the building 39 North Bennet street, or who shall hold the notes of the corporation in payment for said real estate. Any other person so desiring may become a member who shall give to the Association at any time the sum of $500 or more, or property to that amount, or who shall annually subscribe and pay a sum not less than $50; and any person shall cease to be a member by signifying to the clerk his or her intention to withdraw.

II.

The Officers of the Association shall consist of a Board of not less than five Managers (one of whom shall be President, and one of whom shall be one of those persons who are now part owners of the building 39 North Bennet street, or who shall hold the notes of the corporation in payment for the same), a Treasurer and Clerk, who shall be chosen by ballot at the first meeting. The office of Treasurer and Clerk may be held by the same person. All officers elected at the first or any subsequent meeting shall hold office until the next annual meeting and until others shall be chosen and qualified in their stead. The Managers may fill any vacancies that may occur in their Board during the year. * * *

IV.

The Board of Managers shall have the entire government of the school and of the departments conducted by it. They shall appoint such committees as they may deem advisable. They shall cause a fair record of their doings to be kept, which shall be laid before their Board at each meeting. Three of their number shall constitute a quorum for the transaction of business. * * *

VIII.

All commercial paper except checks, and all deeds and conveyances of land, shall be authorized by special vote of the Corporation, and be signed by the President and Treasurer.

LIST OF OFFICERS FOR 1887–'88.

Board of Managers.—Mrs. Quincy A. Shaw, President; Miss Laliah B. Pingree, Miss Ellen Mason, Miss Lucia M. Peabody, Miss Pauline Shaw, Miss Maria T. Hersey, Mr. F. W. Chandler, Mr. Tucker Daland, Treasurer; Mrs. Francis S. Fiske, Secretary.

Advisory Board.—Mrs. Ellen H. Richards, Miss Amy M. Homans, Mrs. Louis Agassiz, Mrs. George Russell, Mrs. Louisa Hopkins, Mrs. Henry Whitman, Miss Sarah B. Fay, Mrs. Henry L. Higginson, Miss Florence Cushing, Miss Marian Hovey, General Francis A. Walker, Edwin P. Seaver, Esq., Dr. Samuel Eliot, G. Stanley Hall, PH. D., William Endicott, Jr., Esq., George Higginson, Esq., Henry Lee, Esq., Charles W. Hubbard, Esq., Henry S. Grew, Esq., Col. Henry L. Higginson.

COOKING TAUGHT IN PUBLIC SCHOOLS.

An account of the cooking classes in the North Bennet Street Industrial School has just been given, and the "Boston cooking classes," founded and supported by Mrs. Hemenway, have been frequently referred to in this volume.

The following interesting statement in detail of this experiment was prepared for, and read by, the President of the new Association before the meeting in Baltimore, already recorded, and was published in the Baltimore Sun of November 2, 1887, in the report of the proceedings on the occasion of the organization of the Industrial Education Association of Baltimore, on the evening of November 1.

That such instruction can be given has been abundantly proved; that it can be given with sufficient economy of teaching force, and of cost for material, fuel, etc., to make it possible to introduce it in public schools, seems to have been shown by the later experiments here recorded, which, in economy of cost, were also equalled by the North Bennet Street School cooking classes.

THE KITCHEN SCHOOLS OF BOSTON.

The committee having requested Mrs. Mary Hemenway, of Boston, the earnest and generous friend of practical education, to whose beneficence Boston is indebted for her kitchen schools, to give the history of their inception, Miss Amy Morris Homans, at whose suggestion the "Boston School Kitchen Text-Book" was prepared, contributed "A Review of Two Years' Work in the Public Cooking School," which was read by Dr. Grady, and of which an abstract follows:

"In the summer of 1883 an industrial vacation school was opened in the Starr King school-house for the purpose, not of keeping girls out of the streets, nor of pleasantly entertaining them within doors, but of finding out, if possible, by practical experiment, if there were any sort of manual training important for every girl, regardless of her social position, to have; and, finding this out, to ask the privilege of trying the experiment in connection with the public schools, with the hope that ultimately it should be made a part of their curriculum, upon the ground that for any instruction of general utility the public money may be legitimately expended. This industrial school was continued during the summers of 1883 and 1884.

CITY SCHOOL OFFICIALS VISIT THE SCHOOL.

"Among the 300 visitors to this school, of which cooking was but one of many branches of manual work taught, were the Superintendent of the schools and several members of the School Board, notably two of the committee on manual training, who, by choice, chose the day upon which a dinner, a most savory meal, was served. They were invited to partake of it; they dined, and were so much impressed by the work that had been done by the school, that they were more ready to assist in a decision in the right way when a decision was to be made in September by this same committee on manual training. At that time (September, 1885) a hearing was given to persons interested in industrial training; and at that hearing those interested in the Tennyson street school appeared and asked leave to enlarge the kitchen in that school to the full size of the basement room, and to maintain a cooking school therein which should be attended by 150 girls from the South End grammar schools, and which should be known as Boston School Kitchen No. 1, as it would be the first kitchen in any public school house in the United States. The proposition was received with kindly favor, and in the school committee meeting October 27, 1885, it was voted to permit girls of the Everett, Franklin, Horace Mann School for Deaf Mutes, Hyde and Winthrop Schools to attend Boston School Kitchen No. 1, provided that the parents or guardians of the pupils should so request in writing—the pupils to attend on probation.

SESSIONS AND DISCIPLINE OF THE SCHOOL.

"The sessions of the school of cookery are the same as those of the public schools. Fifteen pupils is the standard number to one class, and the classes alternate morning and afternoon sessions. The discipline of School Kitchen No. 1 is under the direction of the principal of the Winthrop district; but any disorderly conduct on the part of pupils is to be reported to the principals of the schools from which such pupils come. The absence of pupils is reported to the principals of the schools from which they come, and are recorded as absences from the regular classes of the grammar schools to which they belong; the tardiness of pupils is also reported to the principals of the schools from which they come. It is made the duty of each principal to send to the teachers of the cooking school class rolls containing the names, ages and residences of the pupils in each class sent from the school. It is also required of the pupils attending the school that they should have sufficient intelligence to keep a recipe book.

THE EXPENSES OF THE FIRST SCHOOL A SERIOUS DRAWBACK.

"After the hearing in September, and before action was taken by the School Board, sufficient encouragement was given to warrant the enlargement and more perfect equipment of Boston School Kitchen No. 1, as the kitchen in Tennyson street was thereafter called. In regard to the cost of the kitchen, it is sufficient to say that the amount of money expended for Kitchen No. 1 would, with the experience that has been gained, equip six kitchens quite as satisfactorily, and in some respects more so. In November, 1885, School Kitchen No. 1 was opened. Two teachers were employed, who alternated in their teachings, as did the classes, each one thus keeping the same children under her charge during the year. The general plan of work was laid as follows: In a class of 15 girls, 12 were appointed cooks, each having her own utensils, gas stove, etc., and each at the same time preparing the same dish; the remaining three were house-keepers, building the fire and doing the other kitchen work. The house-keeping was done by the girls in turn. The great drawback to this system, of having each girl prepare the whole of each and every dish cooked, which at first was deemed best, was the large quantities of food prepared, and as a result the great expense, which was for twenty-nine lessons to 150 girls, for provisions and fuel, $604.11.

"The school grew in popularity with pupils, parents, masters, and assistants. Of four masters and 27 assistants represented in School Kitchen No. 1, not one withheld his or her heartiest cooperation. They regarded the work as coordinate with their own, and sent their girls, stimulated by their own enthusiasm, to do their best to prove what the pioneers in this work claim—that its underlying principle is the true development of womanhood, and that responsibility is its outgrowth.

THE ECONOMICAL PROBLEM FINALLY SOLVED.

"The school kitchen was visited by about 700 persons during its first year, many of whom were educators, from all parts of the country. All were enthusiastic, all pronounced the work a success; but they who bore the responsibility knew that the success desired—its ultimate success—by the School Board would never be gained until it was placed upon that basis of economy that should recommend and make it possible not only for Boston, but for every other city in the United States. Much earnest, anxious thought was given the subject. It was decided that it required no more physical strength to teach cooking than to do general teaching; therefore but one teacher should be employed and a simpler plan of work devised.

"Boston School Kitchen No. 2, maintained and managed by the City, was opened in December, 1886, and a little later the Eliot School Association established a school in a public school room at Jamaica Plain. As a result of the experiment tried last year, there are now four central schools, that can give to 1,400 girls a course of twenty-seven lessons each in a school year of forty weeks, at the minimum cost of 28½ cents for twenty lessons, or about 1⅜ cents per head per lesson, plus the teachers' salary, which, in the school committee report, November 9, 1886, was reckoned to be for the first year of service $456, with an annual increase of $48, until the maximum salary of $744 be reached. This corresponds to the salary of a third assistant in the grammar schools.

"Possibly a clearer idea of the work of the past year may be gained by the following summary: It has cost to give 150 girls twenty lessons in practical cooking and kitchen work just $32.50 for provisions and groceries and $10 for fuel, including coal, gas, and kindlings, making a total of $42.50, plus the teacher's salary. These 150 girls have cooked at home, not counting the number of times any dish has been repeated during the week, 10,740 dishes in the twenty weeks. There is practical work. Taught habits of thrift and industry, the girls who are to be the mothers of the next generation will learn to respect household labor, and to feel that they dignify it by their own womanliness and capacity to administer its affairs with wisdom gained by study and experience. It is, taken all in all, one of the best lessons our girls can have, and it is gratifying to hear that they are learning to value it."

THE INDUSTRIAL SCHOOL FOR GIRLS, MILWAUKEE, WISCONSIN.

In this connection the account of a Western industrial school in which similar training to that given to the classes attending the North Bennet Street School in Boston, and to the various educational methods which had their origin in the Wilson Industrial Mission School in New York, has been pursued through several years of continuous residence by the scholars, may be of value.

The address from which the following extracts are taken was delivered in 1885, and gave the conclusions reached after ten years of experience. While the conditions surrounding the pupils of the public schools differ in essential particulars from those which surround the inmates of an industrial home, as appears in the account of the home life of the pupils here given, still the experiences also given of their school life, with its alternating training in books and in industries, are equally applicable to the pupils in the public schools; and certainly the admirable arguments here adduced, grounded on the *educational value* to the child of the courses in "manual training" and in allied industries, as well as in the preparatory courses for younger children, apply with no less force.

Nor should it be forgotten that the interests of the public are very directly and evidently involved in the kind of education given to the children in "Industrial Homes," "Reformatories," and "Orphanages", the unfortunate children who, from any cause, are deprived of home training; and who, unless made self-helpful and self-respecting, must inevitably become burdens on the community. For all such children the questions relating to the best forms of Industrial education are vital questions, and a due consideration of their educational interests is at least *as* incumbent on the public authorities as are the like interests of other public school children, while their claim to consideration in this volume is equally irrefutable, since the theory of public free education by the community necessarily includes the children of all citizens.

The fact that some citizens do not choose to avail themselves of this provision in no wise invalidates this theory. The State may, and in some instances does, insist that the children shall not be deprived of their privilege of education from any whim, prejudice, or indifference of the parent, and requires that equivalent educational opportunities be secured to the children; while, as is here emphatically shown, public-spirited, benevolent citizens in many places in the United States are earnestly endeavoring to combat the evils of ignorance and its consequent poverty. The history of these efforts are full of encouragement and of value to educational students. For these reasons there are grouped in this chapter these records of several noticeable experiments in industrial training in various classes of schools and in widely separated places.

As the results of practical experience are more instructive than theories, however well the latter may be stated, it is believed that, in addition to those already given, the following detailed account of the methods of industrial instruction adopted in the Industrial School for Girls in Milwaukee, as set forth by Mrs. Mary E. Cobb, the Superintendent,* will be found worthy the consideration of all educators who care to investigate this matter of manual training and its related studies:

INSTRUCTIVE AND PRODUCTIVE EMPLOYMENTS; THEIR SUITABILITY FOR INDUSTRIAL SCHOOLS.

This title suggests at once the existence of opposing elements in all the industrial pursuits in the institutions named. The purely educational ideal takes no account of cost or waste, but aims only to promote the future efficiency of the individual in the earning of a livelihood and in intelligent citizenship. The productive ideal is the accomplishment of the work of the institution by the pupils, to prevent outlay for labor, or the pursuit of such mechanical employments as will bring an income which shall in some degree repay the management for the expenses of the school and home. Thus far employments for dependent or offending children have been more or less of a compromise between these extremes; something is sought by which they shall both earn and learn. We have not dared to expect approval of expenditures for manual instruction which can not be shown to be likely to return at least the money invested; and there is ever a tendency to sacrifice the improvement of the child, even in mechanical arts, to the opportunity to profit by the proficiency already gained. This is sometimes shown in keeping the pupil too long at one kind of work to avoid teaching another the same, or in continuing him in work rooms or shops where money is earned, while ignorant of things which might be learned in other departments. The habit of industry acquired by regular employment is the strong point advocated by those who practise such a course. They forget that the habit of hating a monotonous mechanical task is formed at the same time, and is apt to prove the stronger one.

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*Instructive and Productive Employments; their suitability for Industrial Schools. By Mrs. Mary E. Cobb, Superintendent Industrial School for Girls, Milwaukee, Wis. Reprinted from proceedings of twelfth Conference of Charities and Correction. Pp. 11.

PRIVATE MANUAL TRAINING SCHOOLS FOR BOYS.

A few manual training schools have been established for the children of the more fortunate classes of society, where the ideal of instructive employment for boys has been well inaugurated. These in the West are notably those at Saint Louis and Chicago. The Working Man's School in New York City, also for boys, has given an example of the advantages of that "all-sided development" which is the only true education. But with the exception of the sewing classes in the public schools of Boston and Philadelphia, and the introduction of the study of domestic economy in a number of private schools in New York, under the auspices of the Industrial Education Association, little organized school work leading to perfected manual training for girls has been effected.

We may not hopefully look even to these established enterprises for plans and methods to improve our work, as the institutions we are considering can not often afford to introduce them. We should, however, carefully study all that has been accomplished or claimed anywhere; for, having made up our minds as to what we really desire, we can always see more clearly what we can afford, what we may do, and what we must not do, in suiting our ways to our means. Many popular and attractive ideas do not stand the test of such study. Although this question is one of the most unsettled of to-day, it is in some form or other as old as the pioneer institutions.

THE INTERESTS OF SOCIETY, QUITE AS MUCH AS OF THE INDIVIDUAL, ARE INVOLVED IN THIS QUESTION OF INDUSTRIAL EDUCATION.

* * * A fact sometimes undervalued in its consideration is that the industrial schools and reformatories aim to return to society honest, self-supporting citizens, in place of the dangerous refuse given them as material for their work. This material is worse than lost if not so returned. It becomes pernicious, destructive and extremely expensive.

We can not look at the question as an English writer in the Nineteenth Century has recently done, who argues that society has no right to spend upon the offending child more money than well-behaved and orderly poor children who have homes may receive. The benefit to the individual is not perhaps the strongest plea for care and restoration of destitute and erring children with even the philanthropist. In society, the interests of high and low are closely identified. The pestilence bred in the hovel may desolate the palace. If social conditions, at least partially chargeable to the vices of the rich and prosperous classes, brought these children to their present condition, they are more directly the objects of justice and charity than the good children of the worthy poor. It is but an instance of the leaving of the ninety and nine to seek the wandering one. But their right to the best instruction we can afford being granted, what shall we do and how shall we do it? It will help us to answer these questions to consider some of the causes of the differences between these and ordinary children. * * *

The greatest evil of our day is the general lack of family training; and the primary reason is that girls and women do not do, nor *know*, their duty. Dr. Harris said at Saratoga, in 1881: "Society has not equalized conditions in the family to the extent that it has equalized conditions in the school, the social community, the State and the church. In the family, poverty and wretchedness are allowed to tell upon the nurture of the child, and to sow in him evil seeds, which grow through all after life, in spite of whatever may afterward be done for him. The criminal parent may bring up his offspring to vice. The ignorant parent may bring up his children to manifold bad habits of person and conduct, which will prove embarrassments in all after life."

Few seem fully to realize the awful disadvantages resulting from such influences. It is undoubtedly the greatest misfortune that can befall a child to miss the priceless blessings of a well-taught and lovingly protected infancy. And it is a serious question whether, this having been missed, the loss can be made up to the child by simply supplying the same a little later. * * *

The field of controversy between the advocates for a general placing of children out in families and those of institutional training for neglected children opens here. I will not enter it, but say, in passing, that anything tending to antagonize the two methods of child-saving, or to make one more disgraceful than the other, is likely to do great harm. This study of employments for institutions is, however, based upon the belief that there is a large class of children who should receive their training, even up to the time of going out to earn their living, under expert special teachers, who know how to root out as well as to plant, to tear away the false as well as to supply the true foundations. Many should be taught in institutions, because there they can be better taught than elsewhere. Such a training school should not be considered a temporary shelter or a makeshift. It has its own work to do in the world, and should be a grand, uplifting force for the lower classes. The good of the child should be its aim, first, last, and always. On this ground only is there reason for the existence of a definite system of institutional instruction, intended to cover a prescribed period of time. In such a system, manual training should have an honored place.

SUPERIORITY OF THE PRESENT SYSTEM OF INDUSTRIAL EDUCATION OVER THE OLD FORMS OF MANUAL LABOR SCHOOLS.

The old systems were deficient in having no principle of selection. Chair-seating, hoop-skirt making, basket-weaving, knitting-machines, have been at various times introduced to supplement the domestic work, but without special regard to the pupil's development in mental strength or manual skill. There should be a series of work lessons, so arranged as to awaken thought, and to give the knowledge and use of tools and utensils side by side with the ordinary lessons of the school-room.

THE PRACTICAL INDUSTRIAL TRAINING OF GIRLS.

With hesitancy I attempt to present our own system of manual training for girls. Our school is far from being a model. Being a private corporation, we have been crippled by an exceedingly limited income and by an unrecognized, or misunderstood, position among the charities of the State. We feel our defects and limitations every day. Besides, the persons actively and eagerly engaged in such an enterprise are not the ones to give a final judgment on it. There are tendencies, good and bad, which we may not discern, and faults, doubtless, of which we are not even aware. But experience has taught us some things which may profitably be told, and has established views and practices which may deserve more than a curious attention.

The main practical difficulty has been in formulating a series of work lessons whose value should be truly educational. This has been said to be more difficult with girls than with boys. It has not seemed so to me, but rather the reverse. In every institution there is much domestic work necessary, and it must be done promptly and well by somebody. For girls this can be utilized as the basis for progressive lessons, grading up from the simplest to the most complex and important household knowledge. Sewing, cooking. and laundry work afford all that can be desired in this respect. And as these should form the future employments of at least nine-tenths of the girls of humble parentage, and as they are now very imperfectly valued or performed by an equal proportion of grown women who are housekeepers, a field opens which can not be overestimated.

THE KINDERGARTEN THE BEGINNING BOTH OF INDUSTRIAL AND LITERARY EDUCATION.

Our progression, in manual as in literary training, starts from the kindergarten. We also use it temporarily to arouse and develop faculties of perception and dexterity in quite large girls, even those of twelve or fourteen years old. Feeble-minded and semi-idiotic children up to fourteen also develop well in the kindergarten. Branching from these earliest occupations, we establish work on one line, books on another. On the latter, the pupil goes up through the connecting class with reading chart and slate to the graded school, where, by six stages, the "A class," the highest, is reached. On the other, during the same time, the "kitchen garden," the primary sewing class, and the miniature flower and vegetable garden lead up to real work for practical uses. Small tables are soon set with all needed dishes, napkins, etc., and real dinners are properly served and eaten by the little learners. Then little beds are made, with due regard to folding and shaping; and draperies and pictures are hung in rooms thus made beautiful for their own use. The songs, marches, and accompanying explanations are dropped only as they are outgrown. Paper-folding and mat-weaving are naturally exchanged for stocking-darning and knitting; while counting, assorting, and describing go on until the clothing going to and from the laundry is all in the proper baskets or on the proper shelves. The stronger boys of nine and ten, in addition to learning to mend, scrub stairs, halls, bath-tubs, and door-sills, also learn something about water, steam and sewer pipes, traps and valves. A little later they have their lessons, not tasks merely, in real garden work, feeding poultry and pigs, and keeping the lawn clean. The girls of the same age make all their clothing, except dresses, and learn some drawn work and embroidery, of which the rudiments were taught, and often the original designs furnished, in the kindergarten.

These children, 80 in number, 50 boys and 30 girls, all under eleven years of age, live in a family building by themselves, with a matron and two assistants. They do the work of this family, except laundry work, baking, dressmaking, and making of the boys' suits. They are taught by classes, and while at work are always with the instructors, who explain, criticise, and report upon each task. The matron teaches sewing; the first assistant, bed-room work; the second, kitchen and dining-room work. All pupils are examined, and their work is changed quarterly. Mrs. Willard's Primer of Domestic Science, No. 1, is used as a text-book. Very little difference is made, or seems to be needed, in thus instructing boys and girls together. The boys want to do everything that the girls do, either with their needles or in setting and serving tables and cleaning of rooms, and are just as proud of the baby skill brought from the kindergarten and applied to darning and mending. I heard a little fellow of seven years gravely criticising the patch on his apron, because the corners were not rounded similarly and the stripes did not match, adding that he wished he had done it himself. On the other hand, the girls are quite as eager for the rake, hoe, and trowel as the boys, and are as much interested in the calves, pigs, and chickens.

THE PRIMARY CLASSES.

To sum up the work of these primary manual classes: Children from three to six or seven years work in kindergarten, and our kindergarten partakes largely of the nature of the maternal schools of France rather than of the strictly German type. From seven to eleven years these occupations are gradually exchanged for *real employments*, graded and arranged for use as an educational power, and carried on side by side with the school-room work, which, during the same time, takes them into reading, writing, a little geography, arithmetic, and drawing. We have not yet had adequate instruction in drawing, but the kindergarten lessons as to form, color, and combinations are kept in mind, and the children are encouraged or required to copy natural objects and pictures.

The time-table for the youngest includes two hours of school and two of work before 12 o'clock, one of work and two of school between 1 and 5 o'clock p. m. The rest of the twenty-four hours is given to play, dressing, meals, and sleep. A direct motherly care is exercised night and day, and very careful attention is given to manners and personal habits. The aim is to have the matron and teachers kept in close sympathy with each other, and in practical use of the kindergarten rule of patience and gentleness.

Besides this children's home, the school, which is conducted on the family system, consists of three more family groups of girls (two of them residing under the same roof), whose ages range from ten to eighteen years, together numbering 120. The classification into families is based on the special needs of each in manners and morals. The literary work is that of a graded school in primary, intermediate and higher rooms, the latter taking, besides the common English branches, American history, civil government, and domestic economy.

DIVISIONS OF INDUSTRIAL WORK.

The industrial work, whether for the school or for customers, is divided into the following departments:

(1) *Plain cooking.*—Dish-washing, dining-room work, and marketing. In this department, with three teachers, there are three kitchens and five dining-rooms, and each class contains from 6 to 10 girls, working daily from four to five hours.

(2) *Bakery.*—Making of bread, rolls, plain puddings, cakes and pies in large quantities. One teacher; class of 2 to 4, daily work four hours.

(3) *Laundry work.*—Washing, starching, and ironing of all grades up to curtains, fine muslins and laces, by hand, no steam power nor machinery being used. One teacher; class of from 12 to 15; daily, five hours.

(4) *Care of clothing.*—Cutting by patterns, making and mending of plain clothing and plain knitting. Three teachers; classes of 10 to 20; daily, five hours.

(5) *Fine sewing.*—By hand and machine, fine mending, drawn work, ornamental needle-work of many kinds, crocheting and knitting of woolen garments. One teacher; class of 10 to 20, mostly on custom work; daily, five hours.

(6) *Dressmaking.*—Regular course of instructing in taking measures, cutting and fitting of dresses, cloaks, and shirts by a perfected professional system. Eight hours a week, in two lessons, by a practical and experienced dressmaker from the city.

(7) *Advanced courses in cooking.*—These are taken at the Milwaukee Cooking School, under Miss Hammond, a well-known teacher from the Boston School of Cookery. Three classes, of 8 each, have attended one-half day a week during the last winter, taking up the regular practice lessons. This course was made possible for our girls by the contribution of the necessary funds ($8.00 per pupil for each course of twelve lessons) by a number of benevolent ladies of Milwaukee. In addition to the lessons thus given, several girls at a time are under special instruction in the care of the sick and of little children ; and all the work of the sleeping-rooms, including sweeping, dusting, care of closets, bath-rooms, linen and bedding and house-cleaning, is taught in the early morning hours by three of the literary teachers.

We desire to introduce, under instruction, the raising of fruits and garden vegetables and bedding plants and flowers ; but, although this could be made at once a remunerative industry, we have so far been unable to afford the necessary expense for its outfit. Each of the girls has her own small flower-bed, and many work in the garden and on the grounds at times.

Uniformity of system is secured by the use in all departments of the text-book "Household Economy," published by Ivison, Blakeman & Co. All work lessons are marked in pocket record books by the teachers in the same way as are the lessons from books in the school-rooms ; and individual progress is daily recorded. A larger book, with each girl's name, the departments of industry in which she has already been and the proficiency attained, is kept at the office. These reports, with the promotions and appointments, are read before the school quarterly, the same as the conduct grade and school register.

All industrial instruction is, as far as is possible, given in the approved methods of the best cooking and sewing schools of our large cities. Each pupil goes through four industrial classes a year, unless obliged to turn back to complete the assigned lessons in book or practice.

THE RECORD OF A DAY.

The time-table for the older families is substantially as follws: Immediately after breakfast, which is at 6 o'clock in summer and 7 in winter, all are assembled in the main school-room, where, in addition to devotional exercises, a brief lesson in practical morality is given by the superintendent. The kindergarten and primary schools remain for their early sessions, while all others go by classes with teachers to their respective work-rooms, where, with two short recesses at 10 and 12 o'clock and forty-five minutes for dinner, work lessons are continued until 2 p. m. The working apron is then exchanged for school dress; and at 2.30 all departments of the literary schools are in session until 5 in winter and 5.30 in summer. After an hour and a quarter for supper and recreation, the evening is given to the preparation of lessons for the next day.

I should apologize for being so explicit, had I not been urged by some recent correspondents to give full details of the manner of our work. Perhaps no other school of the kind has been doing its domestic work in so systematic a way, though most of them do it, and do it well. But the regular classification and progression, the changes of exercises and instruction, by which from three to five hours daily can be given by a girl to industrial lessons in various departments, taught from the book as well as in practice, while she is doing four hours' work in the school-room daily, is nowhere else to my knowledge so thoroughly carried out. * * *

Our children come to us at all ages, from earliest babyhood up to ten years old for boys and sixteen for girls. The average age of children leaving us is about thirteen years, as many little ones are given away for adoption. Girls leaving us beyond fourteen years of age have, almost without exception, entered upon the receipt of wages sufficient for their support. Many not yet of age have considerable sums in bank saved from their earnings. Most of these have gone into family service, a few as seamstresses and nursery governesses, and three have been school teachers. Four have become industrial teachers in other institutions. Twelve in all have become paid assistants in our own.

The school is but ten years old, and the majority of the 320 it has dismissed are yet minors; but 17 are happily married, and almost without exception good housekeepers, exemplifying the truth of the proverb, "Her husband also, and he praiseth her."

PRACTICAL CONCLUSIONS

In conclusion, I think we may reasonably claim:

(1) That ordinary domestic employments can be systematically graded and taught for instructive purposes in schools for dependent children and girls.

(2) That girls neglected in their earliest years can by such training have better prospects for honorable self-support than with ordinary family instruction.

(3) That such a system of industrial education can be carried on with very limited means; and that, with judgment and care, all features introduced as purely educational, the results not being needed for the school's use, can be made considerably more than self-supporting.

(4) That in schools for children averaging under fourteen years of age industrial employment could not and should not be expected to bear any considerable part of the support of the institution.

CHAPTER XVIII.

MANUAL TRAINING SCHOOLS AS A PART OF THE PUBLIC SCHOOL SYSTEM.

The origin of the typical Manual Training School in the United States — The first free public manual training school established in Baltimore, Maryland — Various forms of special schools incorporating manual training features, established in different cities—Public Manual Training schools in Baltimore, Toledo, Omaha, Philadelphia, Cleveland — The first public suggestion of adopting these schools as a part of the public school system made by Hon. M. A. Newell, State Superintendent of Maryland — The introduction of the typical manual training schools in the United States due to President Runkle, of the Massachusetts Institute of Technology, and to Professor C. M. Woodward, of the Washington University, Saint Louis, Missouri, just as the like introduction of Industrial Art Drawing in the schools of Massachusetts was due to Superintendent John D. Philbrick, C. C. Perkins, Esq., and Professor Walter Smith — To Presidents Francis A. Walker and William G. Eliot credit is due for their support of the new education in the schools attached to their institutions — Reference to the incorporated schools of Boston, Chicago, and Saint Louis — The movement for establishing similar schools as regular public schools in various cities — The Baltimore Manual Training School — President John T. Morris, of the City Board, active in promoting the new school — Early movements in promotion of — Professor Woodward invited to deliver an address at Johns Hopkins University — President Gilman heartily endorses this movement — Approved by city authorities in 1883 — First circulars and programmes — School opened March 3, 1884 — History of first weeks—Visits to the school — The school visits Washington — Respects paid to General Eaton, United States Commissioner of Education — Machinery for metal working added to the school plant—List of officers and teachers for 1884—Report of the Director for the year 1884—Director Grady retires from the school in January, 1886—Mr. John D. Ford, P. A. E., U. S. N., appointed as Principal of the school—Extracts from second catalogue—List of officers and teachers for 1886–'87—State Board of Education Report for 1885 pronounces the school a success—Extracts from catalogues and annual reports from 1884 to 1888—Description of the school at work, in leading city journals—Preparatory Department added in 1887–'88—Post-Graduate class in Mechanical Engineering opened in 1888—Programmes of courses of study—Financial statement by years—List of City School Board officials—List of Instructors for 1888–'89 — The Toledo Manual Training School, Toledo, Ohio — Description of, by Superintendent Compton — Mr. Jesup W. Scott founded "The Toledo University of Arts and Trades," the Directors of which subsequently united with the city school authorities, and the Toledo Manual Training School, now one of the free public schools of the city, is the result — Address by Col. Augustus Jacobson, of Chicago, at the inauguration of this Public Manual Training School—Extracts from reports giving history in detail — Details of courses of study both for girls and boys—Evening schools attached—Omaha, Nebraska.—Manual Training School established in October, 1885—Attached to City High School —

Extracts from reports by City Superintendent and by Committee on Manual Training — Manual Training School of Philadelphia founded in 1885 — Extracts from report by President Steel, of City Board of Education — Description of building—Report of Principal Robert Crawford — Extracts from city ordinances and by-laws of the Board of Education—Cleveland, Ohio — The example of Toledo leads to action by public-spirited citizens — A private Manual Training School established in June, 1885 — Statement of City Superintendent Day, reciting history of the movement which has resulted in giving to the school children of Cleveland advantages similar to those enjoyed in Toledo — Details of course of study and methods of instruction — Extracts from the report of the discussion in the city Board of Education on the proposition to utilize this school for teaching the public High School pupils — A letter from a citizen urging the adoption of some form of industrial training in schools of lower grades.

GENERAL INTRODUCTION.

While the genesis of the typical manual training schools of the country is clearly traceable to their Russian prototypes, and the general movement towards a further development of industrial training in the common schools of the people is due to the success attending the general introduction of industrial art drawing in the schools, the further step of adopting the technical manual training school as one of the recognized schools of a city was first taken in Baltimore. This example has already borne fruit, and I have thought it well to group these similar schools together in a chapter.

The cities in which schools of this class have already been established are Baltimore, Toledo, Omaha, Philadelphia and Cleveland, given in order of date of their opening. Each school differs in some respects from its fellow, though all have a strong family likeness.

The Baltimore school closely resembles its models, the St. Louis and Boston schools, differing in the fact that this is a recognized public free school, while they are largely if not wholly supported by tuition fees. The school in Toledo, Ohio, now a public school, was founded as an incorporated endowed technical school, and owes its origin to a generous public-spirited citizen and his heirs; so that the city of Toledo, in adopting this as one of their public schools, had the advantage of receiving as a free gift a very substantial property. The city of Omaha, after investigating the St. Louis school, decided to adopt that as a model, and to attach the school to their high school as an integral part of the machinery of that school, and claims to be the first city to have done this. Philadelphia has followed more closely the prior example of Baltimore, and established a separate manual training school, as a distinctive species of high school.

In a previous chapter the initiation of the movement which in Baltimore culminated in the founding of the new form of schools was credited largely to the teaching of Superintendent Newell in public addresses, first as president of the National Educational Association at Louisville and subsequently on other occasions.

THE PIONEERS IN ADVOCATING THIS NEW CLASS OF SCHOOLS.

While the suggestion of adopting these schools as an integral part of the free public school system throughout the country is largely due, as we have seen, to Superintendent Newell of Maryland, the first introduction and popularization in the United States of the manual training schools themselves, as a class of special technical schools, is primarialy due to Ex-President Runkle, of the Massachusetts Institute of Technology, and to Professor C. M. Woodward, of the Washington University, St. Louis, Missouri. By publications, addresses, and most of all by successful demonstration, both at Professor Woodward's school in St. Louis and Professor Ordway's classes in Boston, these two advocates did for manual training schools what the late Charles C. Perkins, Esq., Superintendent John D. Philbrick, and Professor Walter Smith had done for the successful introduction and popularization of industrial art drawing in the schools of Massachusetts.

To President William G. Eliot, of Washington University, and to President Francis A. Walker, who succeeded President Runkle in charge of the Massachusetts Institute of Technology, every credit is due for loyal, unwavering support of those directly in charge of the schools as well as for their public advocacy on all proper occasions.

The use made of Professor Woodward's published arguments and programmes of courses of study in the different cities and towns when the new movement is first advocated, while it tends somewhat to a monotonous sameness in their publications, bears emphatic testimony to the fact of the pioneer services of this enthusiastic advocate of the new system. So, in the early years of the drawing movement, there was nothing authoritative to be found outside the spoken and printed words of Walter Smith. These men have thus set their marks upon the new movements, just as Columbus, Livingstone, and Stanley impress theirs upon the virgin Continents.

The desirableness of establishing this class of schools as a part of the public school system of large towns and cities is now on trial; the rapidity with which the example of Baltimore has been followed indicates that, in the judgment of many, the experiment is regarded as successful.

WHERE THESE PIONEER SCHOOLS ARE SITUATED.

In St. Louis, Boston, and Chicago are admirable incorporated schools of this class, to be described later in this Report, which have been, as frequently stated in these pages, the models after which the public Manual Training Schools have been copied. Similar schools have been recently established in the Ohio cities of Cincinnati and Cleveland. None of these incorporated schools are connected with the system of public free schools, with the exception of the one in

Cleveland, which was first started in a small way in February, 1885, with such satisfactory results that in March, 1887, the Board of Education of that city petitioned the Legislature for authority to levy a special tax, to enable them to send pupils from the public schools to this special school; and a law authorizing the tax was passed in April, 1887.

THE MOVEMENT FOR ADOPTION OF SIMILAR SCHOOLS AS A PART OF THE SYSTEM OF PUBLIC SCHOOLS.

In addition to the establishing of the public high class schools modelled after these pioneer institutions, a number of cities and towns, not yet ready for various reasons to establish such separate schools have as already stated, adopted some of the salient features of these schools, in their higher grades; so that various experiments, in what may, perhaps, be properly termed Secondary Industrial Education, are now being tried in many different centres.

The history of the preliminary steps taken to establish public free Manual Training Schools in the five cities named, with full details of the methods and courses of study adopted by these schools, will now be given as fully as it is possible to do from the data obtained.

At risk of much repetition, the details of courses of study and of daily programmes of lessons, are given of each school, so that those interested in investigating this novel movement in education may find here the material for definite study and close comparison of methods.

I am greatly indebted to the courtesy of the principals and trustees of these schools for the facilities and aid so freely furnished.

THE BALTIMORE MANUAL TRAINING SCHOOL.

When, after careful investigation and due consideration of the subject of introducing some form of training in Industrial Education as an integral part of the public school system of the city, the Baltimore school authorities finally decided to undertake the experiment, the Manual School of The Washington University, Saint Louis, under the charge of Professor Woodward, was fixed on as the model of their proposed school. In the autumn of 1883, when their plan had been fully matured it was presented to the city authorities, who approved it and empowered the School Board to open their experimental school, as hereinafter recited. The subject was discussed in the public press and much interest awakened. Finally Professor Woodward was invited to the city to deliver an address setting forth the plan, object, methods, and success of the school under his charge. This address was delivered at the Johns Hopkins University to an audience comprising many of the city officials, the School Board, and the active friends of education. President Gilman warmly endorsed the proposed movement.

The address of Professor Woodward was listened to with great interest, and the proposed new departure in education was welcomed with enthusiasm.

An account of the action taken by the city authorities, which preceded, and which prepared the community for this public demonstration in favor of the new educational movement, as shown in the records of official proceedings, will now be given.

The resolution appointing a committee of the Board of Education with instructions to examine into and report upon the proposition to introduce industrial training in the public schools of Baltimore, with the report made by the committee, which follow, are given in the catalogues of the school.

APRIL 24, 1883.

In the Board of School Commissioners, Mr. Joshua Plaskitt offered a resolution, which was seconded by Mr. John P. Poe, and adopted: setting forth that it is well-known that a number of the boys and girls leave the public schools of Baltimore without any knowledge of the mechanic arts or other industrial pursuits, and find themselves at once in front of the realities of life, destitute of the means of earning a livelihood; and that it is known that such boys and girls are unable to apply the principles taught them to practical advantage in life, and that, in order to fit them as quickly as possible for self-support, the subject be referred to a committee of three for investigation and report. The committee appointed were Messrs. Joshua Plaskitt, James W. Bowers, and John P. Hancock; Messrs. John T. Morris, Henry A. Wise, and Charles G. Edwards were added to the committee.

REPORT OF COMMITTEE.

JUNE 19, 1883.

The undersigned committee to whom was referred the resolution of inquiring as to the expediency of introducing industrial instruction into the public schools of this city, respectfully submit the following report:

The committee have carefully considered the subject and have obtained considerable information by correspondence, as well as by personal interviews with some who have knowledge of this kind of instruction and its results, and from all the information thus obtained from those various sources, they have concluded that it would be expedient to establish a school for *Manual Education under the supervision of this Board.*

There seems to be but little difference of opinion among educators upon the subject, all agreeing that it is expedient and proper to furnish instruction adapted to the wants of the future artisans, as well as to those who intend to enter the learned professions, but there is a difference of views as to the best method of accomplishing the desired results.

A knowledge of some form of industrial labor is as necessary as a knowledge of books; and as the State and city acknowledge their obligations to teach children to read and write, they cannot deny their obligation to teach them to work, as the latter is as essential for the public welfare as the former.

It is undoubtedly true that the best and most popular system of public education is that which furnishes such practical instruction to the pupils of the school as will best fit them to perform successfully their duties and obligations to society in whatever sphere they may be placed.

Only a small portion of those who receive their education in the public schools ever enter the professions, but the large number become artisans and adopt mechanical occupations for their future support.

In view of this fact, it would seem proper that this latter class should have such facilities furnished at public expense, as would enable them to accomplish the best results, both for their own benefit and that of the community in which they live.

The public school systems are effecting grand results by the general diffusion of knowledge among the people, but it is the belief of many that even better results can be realized if to their departments of language and science and mathematics, there be added *a department of Manual Education*, to which all may have admission who have the proper qualifications and who desire that kind of instruction.

It is not intended by the introduction of this department of instruction, to turn the schools into work-shops, but *the purpose is training of the pupils*, and not educating them for any special trades. The result of this system of manual training would be the production of a class of skilled artisans in our community who would be able to design and perform much of the work which is done now by foreign artisans. It would foster a high appreciation of the dignity and value of intelligent labor, and would remove the prejudice which now exists between professional and mechanical labor.

The experiment of manual education has been successfully tried in other cities, and we believe that public sentiment would justify the establishment of a school for that purpose in this city. It could be located near the centre of the city, in one of our public school houses, or some other convenient building.

Pupils from the first class of the Male Grammar Schools or the City College of suitable age, could be admitted, after they have left those schools, and the period of instruction could be according to the wants of the pupils.

It is not necessary in this report to mention all the details of management of the proposed school as they could be prepared by the proper committee in charge, after authority has been obtained to establish such school.

As the establishing of a school for this purpose is not embraced within the ordinances relating to public schools in this city, and, as there would necessarily be expenses beyond the present appropriation made for the support of the existing schools, we deem it proper to recommend that an application be made to the City Council, asking for authority to establish the proposed school and for a special appropriation for its support.

In addition to *this manual training school for boys*, we recommend that instruction in sewing be given in such schools as may hereafter be designated by the board. Many petitions have heretofore been presented to the board requesting the introduction of sewing into the schools for girls, and we think that these requests can now be granted with great benefit to the girls, who are taught without any injurious interference with their other instruction. The committee respectfully submit this report and the accompanying resolutions.

JOSHUA PLASKITT.
JAS. W. BOWERS.
JNO. T. MORRIS.
HENRY A. WISE.

Resolved, That the Committee on Conference be authorized and requested to apply to the City Council for permission to establish a School for Manual Education for the use of the male pupils of the Public Schools, under supervision of the Board of Commissioners, and to request that an appropriation be made for the payment of the expenses of said school.

OCTOBER, 1883.

The City Council, at the instance of John B. Wentz, Esq., directed the Board of Commissioners to establish a school for manual training by the enactment of the following ordinance: [See below.]

The following circular, issued in January, 1884, by direction of the Board of School Commissioners, contains the ordinance just referred to authorizing the establishment of the school, and a description of the proposed school, with a programme of studies:

Baltimore Manual Training School, located on Courtland street, in No. 9 School Building, was established by the Board of School Commissioners, under the following direction and authority of the Mayor and City Council:

An Ordinance to empower the Board of Commissioners of Public Schools of Baltimore City to establish a School for Manual Training.

SECTION 1. *Be it enacted and ordained by the Mayor and City Council of Baltimore,* That the Board of Commissioners of Public Schools of Baltimore City be, and they are hereby authorized and directed to establish in the city of Baltimore, in some convenient locality, as near the centre of the city as possible, a School for Manual Training, under such name or title as said Board shall select.

SEC. 2. *And be it further enacted and ordained,* That said school shall be open to the children of the citizens and *bona fide* residents of the city of Baltimore, and that the admission to said school shall be regulated by the law now existing for the admission of pupils to the public schools of the city of Baltimore, except in so far as changed by this ordinance.

SEC. 3. *And be it further enacted and ordained,* That the age and qualifications for admission to said school shall be fixed and prescribed by said School Board; provided, that the fee for the use of tools and materials for pupils, who are the children of residents or citizens of Baltimore, shall not exceed one dollar each per scholastic quarter.

SEC. 4. *And be it further enacted and ordained,* That pupils from other places may be admitted to said school upon such terms and conditions and upon payment of such fees as said Board shall prescribe.

SEC. 5. *And be it further enacted and ordained,* That this ordinance shall take effect from the day of its passage.

Approved October 20, 1883.

WM. PINKNEY WHYTE, *Mayor.*

Committee on Industrial Education.—Joshua Plaskitt, Chairman; James W. Bowers; John F. Hancock; John T. Morris, President; Henry A. Wise, Superintendent; Charles G. Edwards, Assistant Superintendent.

OBJECT.

The object of the school is as follows: Instruction and practice in the use of tools, and such instruction as may be deemed necessary in mathematics, drawing, and the English branches of a high school course. The tool instruction, as at present contemplated, shall include carpentry, wood turning, pattern making, iron chipping and filing, forge work, brazing and soldering, the use of machine shop tools, and such other instruction of a similar character as may be deemed advisable to add to the foregoing from time to time, it being the intention to divide the working hours of the students, as nearly as possible, equally between manual and mental exercises.

The Baltimore Manual Training School differs from the City College in omitting from its required studies foreign and ancient languages, in giving prominence to mechanical drawing, and particularly in affording scientific instruction and actual practice in the care and use of tools.

COURSE OF STUDY.

The following course of study is proposed, subject to whatever changes experience may dictate:

First Year.

Arithemetic, Algebra; English Language, History; Physiology, Physical Geography; Free-hand and Mechanical Drawing.

Shopwork.—Carpentry, Wood Carving, Wood Turning, Pattern Making. Proper Care and Use of Tools.

Second Year.

Algebra, Plane Geometry; Physics, Mechanics; History, Literature; Geometrical and Mechanical Drawing.

Shopwork.—Forging, Welding, Tempering, Soldering, Brazing.

Third Year.

Geometry, Plane Trigonometry, Book-keeping; Literature, Political Economy, Civil Government; Mechanics, Chemistry; Machine and Architectural Drawing.

Machine Shop Work, such as Fitting, Turning, Drilling, Planing, etc. Study of Machinery, including the Management and Care of Steam Engines and Boilers.

Throughout the course, about one hour per day will be given to drawing, and about two hours per day to shopwork. The remainder of the school day will be devoted to study and recitation. Before graduating, each pupil will be required to construct a machine from drawings and patterns made by himself. A diploma will be given upon graduation.

ADMISSION.

Candidates for admission must be at least fourteen years of age, and must present sufficient evidence of good moral character. They must pass a satisfactory examination in reading, spelling, writing, geography, English composition, and the fundamental operations of arithmetic as applied to integers, common and decimal fractions, and denominate numbers. Ability to use the English language correctly is especially desired. Boys fourteen years of age, who are members of the City College, or pupils in the first grade of a Grammar or "Public School," will be admitted without examination upon the recommendation of their Principal.

EXPENSES.

The fee for the use of books, stationery, tools and material will be at the rate of one dollar per quarter for each resident pupil. Free permits may be granted by the Committee, when necessary, upon application of the parent or guardian.

The charge to non-resident pupils will be $12.50 per quarter.

GENERAL.

The school does not teach trades. Its aim is more comprehensive—it lays the foundation for many trades, and at the same time recognizes the value of intellectual discipline.

It is not assumed that every boy who enters this school will be a mechanic. Some will find that they have no taste for manual arts, and will turn into other paths—law, medicine or literature. Some, who develop both natural skill and strong intellectual powers, will push on through the Polytechnic School into the higher realms of professional life, as engineers or scientists. Others will find their greatest usefulness as well as highest happiness in some branch of mechanical work into which they will readily step when they leave school. All will gain intellectually by their experience in contact with *things*. The general result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more successful manufacturers, better lawyers, more skillful physicians, and more useful citizens.

For further information, or for circulars, application may be made by mail, or otherwise, to The Baltimore Manual Training School, care of

HENRY A. WISE,
Superintendent Public Schools.

BALTIMORE, *January* 14, 1884.

NOTE.—Recognizing the success of the school in Saint Louis under Dr. Woodward, this circular provides for the establishment of a school on the same plan.

LOCATION OF THE NEW SCHOOLS.

The Public School Building, formerly occupied by primary school No. 9, situated in Courtland street, a central position, was selected for the use of the new school; the lower story was arranged for workshops and furnished with carpenters' benches, as only wood working was to be undertaken at first.

The organization of the school was effected by the appointment of a Director or Head master at a salary of $1,800, and two instructors in the mechanical department at salaries of $1,200 each. An officer of the Engineers was detailed by the Secretary of the Navy, who was to take charge of the instruction in Drawing, and who also received a small salary from the school.

OPENING OF THE SCHOOL.

The school was opened on Monday March 3, 1884, with an attendance of 60 pupils, all that could then be well received. The house will accommodate 150, but, for the first year, the number is to be limited to 75. The drawing and recitation rooms are all that could be desired and are fitted up with all needed appliances in the way of desks, black-boards, maps, etc. The drawing-boards and some other appliances were made in the school, mostly by the pupils, and, besides effecting an appreciable economy, are proof of the rapidity with which facility in the simpler mechanics may be acquired.

A visit to the school some six weeks after its opening showed a very promising condition of affairs; the school is practically a high school with work rooms attached. Great interest and enthusiasm in their work was shown by instructors and pupils. Certain practical details of management, affecting the conditions for entering the school and the grading of pupils, remain to be systematized before the plan can be pronounced wholly practical and applicable to all public school systems, but the difficulties seem by no means insuperable, and the promising experiment of an industrial High school as part of the school system, first inaugurated in Baltimore by President John T. Morris and his colleagues on the City Board of School Commissioners, will be attentively watched by all interested in this new development of public education.

IMPORTANCE OF THIS EXPERIMENT.

It is because this is the creating of a new class of schools, whereas the experiment in the Dwight School Building of Boston was only the opening of rooms where public school pupils could attend for manual training, that I have called the Baltimore enterprise a "first experiment."

It is in the line of the Dwight School experiment, it is true, as it is of the manual training schools of the Massachusetts Institute of Technology and, avowedly, of the Saint Louis Manual School; but it is different from each and all of these, in that it is the first attempt to embody the class of schools of which the two last mentioned are types into the public school system of the United States. In this aspect the experiment is a very important one, and much may depend upon its success or failure.

That boys can be successfully taught in "Manual Training Schools" is shown by the results obtained in the two representative schools of Boston and Saint Louis, as given later in this Report. Whether similar schools can be established as a permanent feature in the system of the Public Schools of the country, is the question which is at issue in this Baltimore experiment.

INTEREST TAKEN IN THE SCHOOL BY THE PUBLIC.

The school has had many visitors, not only of citizens interested to mark the progress of the new experiment, but of educators from other places.

Colonel Legg, chairman of the Legislative Committee on Education, who, in the course of his official duties, reported favorably the bill to establish such a school as a part of the public school system of Baltimore, visited it on the 29th of April, 1884, and, in the course of a few words of encouragement and advice addressed to the boys, referred to his own part in establishing the school as "an act of his public life of which he was now and hoped ever to be proud." On another occasion, General Bradley T. Johnson, who has shown his interest in a like phase of education by delivering a public address at the commencement of the Maryland Institute Schools, said: "I am glad to see you boys in this school, and I congratulate the city and the State on having such an institution." * * * After severely criticising the shortcomings and mistaken processes of ordinary public schools, and instancing the Greeks and Romans as happily blending physical and intellectual culture—illustrations hardly applicable to the present time and conditions—he closes by saying, "I hope that this will be the beginning in Maryland of a systematic, intelligent effort at the union of physical training with book learning, and that you boys will in all your lives feel the benefit of the real, genuine education you will get here."

On another occasion General Eaton, the United States Commissioner of Education, visited the school, and said a few informal words of encouragement.

It has been the practice of the instructors to take the boys on occasional visits to the great railroad machine shops and to the other mechanical establishments in the city and vicinity.

Subsequently, as a part of their school work, the boys are all required to give an account of these visits, both by drawings and by written or verbal descriptions.

THE SCHOOL VISITS WASHINGTON.

On Saturday, May 17, 1884, a similar trip of inspection was made to Washington; the Navy-Yard, the Bureau of Engraving and Printing, and the National Museum, were visited in turn; a call was then made on the Commissioner of Education and the boys went through their drill before the building; showing by the precision and rapidity of their several evolutions the effects of admirable training.

The Commissioner spoke to them a few genial words and received, in return, the hearty cheers of the boys.

While they marched well and seemed full of animation and intelligence, one could but observe the large proportion of small boys, evidently under age or under size; this apparent want of requisite strength seemed to argue ill for their success when put at heavy work.

Sufficient muscular development and maturity will evidently have to be taken into account as requisite qualifications for entrance to these new schools; while the difficulty of *grading* classes, where mental capacity and proficiency, as well as physical qualifications, are factors of the problem, will be greatly enhanced.

Over-pressure of youthful muscles is no more desirable than over-pressure of youthful brains—and a certain maturity of mind and body must be naturally attained before certain tasks, either mental or physical, can be safely undertaken.

If these conditions are unheeded it is safe to predict a speedy collapse of the attempt to engraft workshops upon the public schools; on the other hand, if the promoters of this new enterprise will rigidly insist that the experiment shall only be tried upon boys of sufficient age, strength, and tendencies, to render them fair subjects for the proposed tests, they will give the new system a fair trial. All know that age is no sure criterion of strength or endurance; often it happens that one boy of fifteen years of age is as large and as strong as another of eighteen or nineteen years; unless these facts are recognized and respected the experiment is foredoomed to failure.

These conditions do not seem to have been considered in the selection of pupils admitted to the Baltimore Manual Training School on its first opening.

Where State legislators and city educational authorities have shown liberality and enterprise such as has, in this instance, been shown by those of Maryland and Baltimore, it seems doubly important that no unfair or impossible conditions should be suffered to put in jeopardy the result; because, if this school fails the failure will long retard, if not wholly prevent, any further developments in this direction. It is therefore important not only to Baltimore but to the whole country that every precaution should be taken to insure to this experiment every condition of success.

ADDITIONS TO THE SCHOOL PLANT.

The Committee of the Board of Commissioners in charge of the school, being so far satisfied with the results of the first few months of the school, reported in favor of completing the mechanical plant by adding a steam engine with all appliances for the use of power, and the lathes, etc., needed for metal-working.

The School Board, after full consideration and discussion, adopted on May 20, 1884, the report of the Committee, and with only a single negative vote appropriated the sum of $3,000 for the above purpose.

This secures for this school the steam power and machinery necessary for full training in wood and metal working, so that it should start upon the second year of the experiment fully equipped with all requisite appliances.

The Board of Commissioners of Public Schools of Baltimore, Maryland, numbers twenty members—one from each ward of the city.

OFFICERS OF THE BOARD FOR 1884.

JOHN T. MORRIS, President.
HENRY M. COWLES, Secretary.
HENRY A. WISE, Superintendent.
CHARLES G. EDWARDS, Assistant Superintendent.

There are twenty-two committees of the Board.

COMMITTEE IN CHARGE OF MANUAL TRAINING SCHOOL.

Messrs. JOSHUA A. PLASKITT, JOHN B. WENTZ, JAMES W. BOWERS, and the President, Superintendent, and Assistant Superintendent.

COMMITTEE ON DRAWING.

Messrs. WILLIAM E. ADDISON, CALVIN J. KING, GEORGE H. BUDEKE, JOHN P. POE, JOHN T. FOLEY.

LIST OF INSTRUCTORS OF THE MANUAL TRAINING SCHOOL FOR 1884.

Dr. RICHARD GRADY, Director of the School—English, Mathematics, Physiology, History; Passed Assistant Engineer JOHN D. FORD, U. S. Navy—Physics and Architectural Mechanical Drawing and Designing; WILLIAM DUGENT, head of metal department; JAMES H. W. ONION, head of wood-working department; Dr. C. F. PERCIVAL, head of musical department.

The foregoing account of the Baltimore Manual Training School closes with the end of the first three months after its opening, at which time the manuscript of the present volume of this Report was completed for the press. The hindrances to the earlier publication of this Report, fully referred to on page XXII of the Introduction to Part I and since continued, have given the opportunity of bringing the histories of the several institutions comprised in this second volume down to a much later date.

The State Superintendent of Education of Maryland, Hon. M. A. Newell, in his annual Report of the State Board of Education for the year 1884, after reciting that the year is notable from the fact that the text-books are now furnished to pupils in the public schools "in the same way as desks, black-boards, and pencils, and that the schools at last are really free," thus refers to the new departure in education inaugurated by the opening of the Manual Training School:

MANUAL TRAINING SCHOOL.

The second noteworthy step was the establishment of the Manual Training School. This is the first instance of a school of this kind and grade being opened and conducted under the authority and control of the public school authorities, and its history and progress are consequently watched with great interest. I have therefore given in the appendix to this report the full and interesting account of the school, kindly furnished by the director, Dr. Richard Grady.

The Superintendent in this annual report also urges most forcibly the need for a "Night School for Manual Training," since, only in this way, can a large class of boys who stand in especial need of such teaching be reached.

The following is the report of Dr. Grady, giving the history of the first year of the school, to which the Superintendent refers. The plans of the school rooms and work rooms, which occupy the ground floor and second story of the large building, which accompany the report, are here omitted:

REPORT OF THE DIRECTOR OF THE BALTIMORE MANUAL TRAINING SCHOOL.

To the Superintendent of Public Instruction:

SIR: In accordance with your request to prepare a summary of the history and work of the Baltimore Manual Training School, I have the honor to transmit to you the following:

HISTORICAL SKETCH.

April 23, 1883, Messrs. Joshua Plaskitt, James W. Bowers, and John F. Hancock were appointed a committee on industrial education. To the committee were added the President of the Board of School Commissioners and the Superintendent and the Assistant Superintendent of Public Instruction.

September 28, 1883, the undersigned prepared for the Baltimore Sun a résumé of the information submitted to the committee, giving the gist of the opinions and arguments developed and the suggestions and recommendations offered in relation to the establishment of the proposed manual training school.

October 20, 1883, the City Council, at the instance of John B. Wentz, Esq., directed the Board of Commissioners of Public Schools to establish a school for manual training.

December 20, 1883, the writer was commissioned by the President of the Board of Commissioners of Public Schools to visit St. Louis and Chicago and inspect the manual training schools in those cities. He submitted a report on his return, which was published in the Baltimore Sun, January, 1884.

January 14, 1884, a prospectus of the school was published. Recognizing the success of the school in St. Louis, under Dr. Woodward, the circular provided for the establishment of a school on the same plan.

January 31, 1884, on motion of Mr. Joshua Plaskitt, the General Assembly of Maryland repealed the Act passed in 1868, entitled "Public Education," and enacted a section in lieu thereof that "the Mayor and City Council of Baltimore shall have full power and authority to establish in said city a system of free public schools which shall include a school or schools for manual or industrial training."

February 4, 1884, Prof. Calvin M. Woodward, Dean of the Polytechnic School and Director of the Manual Training School of Washington University, St. Louis, delivered an address, at Johns Hopkins University, on "The Fruits of Manual Training." President D. C. Gilman had given the use of Hopkins Hall to the Committee on Manual Training School, who had issued some five hundred invitations. John T. Morris, Esq., President of the School Board, presided.

THE WORK OF THE SCHOOL.

March 3, 1884, the school passed "out of the stage of prospectus into the stage of existence." Our Baltimore Manual Training School is the first instance where a school *entirely* devoted to manual training has been organized on the same plan and grade as part of any public school system. It represents the last and boldest step that has been taken to relieve public education from the accusation that it is "unpractical," and its inception marks an era in the educational history of Baltimore.

That there was a real demand for a manual training school in Baltimore is abundantly shown by the fact that hundreds of boys have sought admission. Although it was intended "not to have a class of more than forty or fifty pupils at first," so numerous were the applications for admission that the month of March closed with 62 students on roll, April with 80, June with 100, and September with 150.

It will be remembered that boys fourteen years of age, members of the City College or pupils in the first grade of a grammar or of a "public" school, were to be admitted without examination. One hundred and twenty-five out of the hundred and fifty students in attendance when the school closed in December had brought certificates signed by the principal of the Baltimore City College or the principal of a male grammar school, or the principal of a "public" school.

The course of study proposed for the first year—being subject to whatever changes experience might dictate—was enlarged by the addition of geometry and physics to the theoretical studies (arithmetic, algebra, English history, physical geography, physiology and drawing) to provide for the students who came from the first, second and third-year classes of the City College. To the shop-work (carpentry and joinery) were added vise-work, forging, wood-turning and soldering, instruction in which continued to July 3rd only. In the absence of any rules or regulations, the administration of the school was exercised through orders and instructions received from the committee or its chairman.

On the afternoon of June 12th there was the first exhibition of drawings made and shop-work done during the previous three months. The "Training School Press" printed the invitations and programmes. State and city officials, parents and invited guests filled the hall. The programme consisted of two parts, as follows: Part I. participated in by the students only, and Part II. by the President of the School Board, by the gentleman who framed the ordinance establishing the school, and by those whose sons were then enrolled as students of the school and had tested its usefulness.

Order of exercises.

PART I.

Russian hymn	By the School.
Report of Visit to Pump House, Druid Hill Park	Master Griffith.
Chorus—"Maryland's Ode to the Sable and Gold"	By the School.
Report of Visit to Iceboat Latrobe	Master Kines.
Chorus—"The Saws so Sharp and Bright"	By the School.
Report of Visit to Mount Clare	Master Reese.
Chorus—"The Blacksmith"	By the School.
Report of Visit to Loch Raven	Master Thomas.
Chorus—"One More River to Cross"	By the School.
Report of Visit to Washington	Master Kefauver.
Chorus—"America"	By the School.
Report of Visit to Printing Press Factory	Master Warrington.
Report of Visit to Type Foundry	Master Carter.
Piano Duet	Masters Hughes and Bump.
The Intellectual Department	Master Molinard.
Chorus—"Farewell"	By the School.

PART II.

History of the School	John T. Morris, Esq.
Object of the School	John B. Wentz, Esq.
Success of the School	J. M. Carter, Esq. G. S. Griffith, Jr., Esq. D. F. Haynes, Esq.

Presentation of Prizes.

Competitive Drill and Marching.

In September the school numbered 150 students, whose average age is fifteen years six months. They were formed into three classes, each containing 50. The school session (9 a. m. to 2.30 p. m.) was divided into three equal periods of one and one-half hours each, not counting from 12 m. to 1 p. m. A class, when it went into the shops for instruction, was separated into two equal sections, 25 students going to the wood-working department and 25 to the metal department, each section being under the care of a special teacher. The theoretical studies (arithmetic, algebra, geometry, English history, physics, physiology, geography, and drawing) were taught to classes of 50.

Septemrber 1, the mechanic art courses in carpentry, joinery, and vise-work in use in the School of Mechanic Arts, Boston, were adopted. Their spirit and method have been faithfully adhered to, so that instruction in the shops has not been left to accident or caprice. Mr. Dugent, instructor in the metal department, thus writes: "The method of teaching is to name and describe the various tools, and give practical instruction in the use of them. The system upon which we work is arranged so that the students at the vises have each a piece of metal to work into a certain form. Each form is a lesson, and when one is completed another is given. I am perfectly satisfied with the present system. The advantage of the above system is that it enables the instructor to compare the progress of the different pupils so as to form an average." Mr. Onion, instructor in the wood-working department, briefly reports as follows: "Five per cent. of material is spoiled"—"lessons are given in the use of wood-working tools"—"school work is comparatively better than outside work"—"method of teaching is (1) by class instruction, (2) by individual instruction"—"I am satisfied with the present system of instruction."

All the students will pass successively in the first year (from September 1, 1884, to July 3, 1885) through the wood-working and metal shops. The 75 students who have been under instruction in carpentry and joinery will, on February 10, 1885, after having spent half of the scholastic year in the wood-working department, take the places of the 75 who up to that time will have been pursuing the course in vise-work.

COURSE IN WOOD WORKING.

The lessons completed in the wood-working department are as follows:

(1) Mitered frame.
(2) Single open mortise and tenon.
(3) Double open mortise and tenon.
(4) Through mortise and tenon.
(5) Line mortise and tenon.
(6) Single open mortise and tenon with mitre joint.
(7) Double open mortise and tenon with square and mitre joint.
(8) Through mortise and tenon for rabbeted frame.
(9) Through mortise and tenon for double rabbeted frame.
(10) Brace joint with mortise and tenon.
(11) Blind mortise and tenon with post.
(12) Dowel joint.

The lessons completed in the metal department are as follows (vise-work only, chipping and filing):

(1) Rectangular block.
(2) Rectangular block with champered edges.
(3) Octagon.
(4) Slot joint (half finished).

Small classes have also used the printing press, the papyrograph and the typewriter.

COURSE IN MATHEMATICS AND PHYSICS.

Past Assistant Engineer Ford thus reports his work:

"Weekly recitations in Geometry, Trigonometry and Mensuration have been heard, and lectures given in Physics, and daily practice in drawing in periods varying from 45 to 90 minutes each, to all students.

"The students in A class have completed the first book of Geometry, those in B class are well advanced in the first book, and those in C class are just commencing the theorems. In Trigonometry the students of A class are studying the functions of the arc, and those of B and C classes are finishing logarithms.

"In Mensuration the students of A. B and C classes are studying the theory of Mensuration from the notes of Haswell and Tautwine.

"In Physics the students of A, B and C classes have advanced as far as the composition and resolution of forces, from notes of Avery and Ganot. Experiments with the instruments belonging to the school have been made when practicable. Without a laboratory and additional instruments, these experiments are necessarily not so complete as is desirable. Nearly all the necessary instruments could be made by the advanced students in the school, and as they are of high cost it is recommended that they be so made.

COURSE IN DRAWING.

"The students have all been instructed in the use of the scale and ordinary drawing instruments, except in the use of the pen. The drawing has been of geometrical forms, joints, beams and trusses, besides working drawings for the shops. These have been sketched on a black-board, explained, the names and fitting of the different parts noted, the sizes given, and all necessary calculations made, and a scale to which to work noted, when the work is executed to a scale on paper. It is proposed to continue this system to include form and strength of materials and architectural and mechanical constructions. In other words, the method is that of the best draughting rooms.

"A sub-class of the more advanced students of A class has made drawings of the different floors of the building occupied by this school, showing the present arrangement of tools and machinery and the arrangement of the class rooms."

The Director has given instruction in English language and literature, history, physiology, industrial geography and map-drawing, higher arithmetic and algebra. The habit of diagramming, picturing and tabulating has been taught, and practically ours has been a "school without text-books." It is not proposed to follow so closely such a method of instruction, but it is believed that the teacher who makes a free use of such teaching is the one from whom the scholars get their most helpful items of knowledge, and to whom they give in the end their warmest affection. The late assistant superintendent, whose son is a student in the school, thus wrote of the method of instruction:

LETTER DESCRIPTIVE OF THE SCHOOL WORK.

On returning up-stairs we passed through a room where the printing press was at work, and several boys were employed in setting the type for some printing matter to be used in the school. In the next room the rest of the boys were engaged in the study of History. The novel and interesting way in which this study is taught awakened the longing to have studied the annals of our country's g'ories in a like manner. Not merely the dry facts of some by-gone event were here given Geography and History, "now and forever, one and inseparable," were not rudely torn asunder to be studied in a broken, fragmentary way. The mutual dependence they have upon one another was recognized, and by their union one of the most interesting studies formed that ever delighted boyish hearts. The topic for the day happened to be the late civil war. On one of the black-boards was a map of the theatre of war. The solid North, the solid South, and Maryland, Missouri and Kentucky, which, though sympathizing with the South, joined the North, were each designated by a different color. West Virginia, as separating from the mother state, was also specially marked. The boys copied this map, and while doing so studied the products of the states, the contour of their surfaces, their climate and soil. Next came the state of society existing in each, with the prevailing political parties, the relation each section bore to the National Government and to foreign countries, until finally the causes of the war stood forth in bold relief, and each one saw and understood how inevitable was the conflict, and that, no matter how long postponed, there was only one way of settling the differences in opinion caused by centuries of different education and experience. Here biography, the history of individual lives, stepped in and joined her charms to those of her sister studies. The boys, with ready sympathy, followed tbe lives of prominent commanders on either side, and identified their heroes, as far as possible, with the places in which some noble, daring action of theirs gleamed forth in proof of their greatness. Finally came the end of the long struggle and its results, with the entire change in life and customs occasioned thereby. Thus the Revolutionary war, the war with England in 1812, the Mexican conflict, and the Franco-German war of 1870, have been studied, and surely the boys will remember more definitely the many victories due to American valor by being brought face to face with them in this way than by poring for months over musty volumes of dry facts, and the situation of towns and rivers is certainly more indelibly engraven on their memory by associating them with the actions through which they grew famous.

Physiology, too, that study all-important to man, is taught by means of drawings, which the boys are required to make, sometimes enlarging a small wood cut into a chart two or three feet long. The structure of bones, the position of the muscles, the distribution of the nerves and the circulation of the blood, all the various movements and functions of the organs of the body, are thus explained to them. They are taught in this practical way how wonderful is this outer garment of our soul, while at the same time they gain great proficiency in the use of that "universal language of the world," in which the Indian of the Western prairies may converse with the highly cultured sage of England or France, though neither understands what the other speaks; by which the man of science may explain to the simplest and humblest peasant the most complicated and abstruse problems; but without which he will continually be troubled to make himself understood, though he use the finest figures of language and the clearest logic.

Surely all who have accompanied us will agree that the motto of the school, "The cunning hand and cultivated brain," as there developed, is the thing to be sought after by all who expect to keep up in the race of humanity on the road of life, and that unless these two are taken equal account of by all educators, evil results are bound to follow and make themselves felt in the progress of the community.

DISCIPLINE.

The greatest care has been taken to foster a spirit of manliness and truthfulness and a high sense of duty among the students, and the discipline has been administered by an appeal to these feelings. In every instance where school property has been injured or destroyed by the students they have replaced the same. It has also been considered of the first importance to act in harmony with the parents. The faculty has ruled upon doubtful points of discipline as they arose, and this scrupulous procedure, while giving precedents for the future, has insured precision and consistency.

VISITORS.

His excellency, the Governor of Maryland; his honor, the Mayor of Baltimore; officers of educational institutions throughout the country; army and navy officers; state and city officials; and others have visited the school.

EXCURSIONS.

In aid of the practical studies of the school, and as a means of familiarizing the students with the actual details of work as is done in the School of Industrial Science, Boston, and similar schools; the students, with their teachers, made Saturday visits of inspection to—the Pump House in Druid Hill Park; the Ice-Boat "Latrobe;" the shops of the Baltimore and Ohio Railroad at Mount Clare; Loch Raven, Maryland Central Railroad; Navy Yard, Washington; J. F. W. Dorman's printing press factory; John Ryan & Co.'s type foundry; E. L. Tunis & Co.'s planing mill; Smith & Wick's can factory; Isaac A. Shepherd & Co.'s iron foundry; Otto Duker & Co.'s lumber manufactory; Naval Academy, Annapolis; Union Bridge and Penmar, Western Maryland Railroad; Poole & Hunt's iron foundry; Wm. E. Hooper & Co.'s cotton factory; Brush Electric Light Works; Wm. E. Woodall & Co.'s ship yard. Reports of the visits were handed in, which included descriptions and diagrams of the objects seen.

CONCLUSION.

In the foregoing the effort has been to give clear and simple statements which tell their own story. The success of the enterprise has been beyond expectation, and it can not be denied that the school has been a praiseworthy experiment.

Mr. Wm. Dugent and Mr. Jas. H. W. Onion, instructors, have been associated with me from the day the school opened, and Past Assistant Engineer John D. Ford, U. S. Navy, entered on duty March 17th. These gentlemen have exerted all their ability, all their energy, all their skill, all their resources of whatever kind, in broad, hearty efforts to make the school a success.

RICHARD GRADY,
Director.

JANUARY 1, 1885.

During the second year difficulties began to present themselves, and a conflict of opinion in regard to the management of the school was developed in the committee in charge.

A large expense had been incurred in providing the school with a full plant for working in metal, comprising a steam engine, planers and lathes for metal working, a cupola furnace for casting, etc.

The examination for admission to the school was made more stringent, as a year's experience had shown more clearly the conditions necessary for successful prosecution of the new methods. As the design of the school was not only to furnish to boys desiring it that knowledge of the use of tools no longer easily accessible to them as apprentices, but also to give to the community a class of boys fitted to become skilled workmen who should possess a far higher degree of trained intelligence than those who formerly had had only the training of the old-time shop apprentice boys, it seemed to the Director of the school, as well as to some members of the School Board, proper that the entrance examination should be more stringent. Here were ample opportunities for differences of opinion: First, the large cost of the new plant suggested the desirableness of economies in other ways; and it was readily seen that a considerable sum could be saved by the simple expedient of abolishing the office and salary of the "Director;" second, by urging in justification of this proposition that the school should be more practical and give less of book knowledge. Therefore, since few of the practical people who are elected members of boards of education can be expected to have any knowledge or conception that teaching is both a science and an art of which the best practical engineer, carpenter, or blacksmith may be wholly ignorant, this untenable proposition is most likely to meet with their support.

So it was not strange that in a report made by a special committee of the Board of Education the opinion was expressed that some of the studies taught, such as history, elementary physiology, and music, might be dispensed with. Why, indeed, should a mechanic care to know anything of the history of his race, or of the laws of his own being, and above all why should his time be wasted on any training in music?

A CHANGE IN THE ORGANIZATION OF THE SCHOOL.

The final recommendation of this committee was, in effect, that the office of "Director" of the school, who was also the special teacher of English, mathematics, physiology, and history, should be abolished, thus effecting an economy equal to the amount of his salary of $1,800. This was passed by a vote of thirteen yeas to seven nays.

THE COMMITTEE EQUALLY DIVIDED.

It should be stated that there had been originally two reports made by the committee of four in charge of the school, each signed by two members and expressing very opposite judgment as to the condition of the school and of the policy to be pursued, and also that the large majority of the parents of the boys attending the school united in petitioning the Board to allow the organization of the school to continue at least till the close of the scholastic year, and expressing strongly their estimation of the value of the training given and their confidence in the worth and faithfulness of all the teachers. As a result of the discussion drawn forth by the rival reports, the committee resigned, and a new one of five members was elected. The committees had before been appointed by the President of the Board. The opponents of the school as organized carried their entire ticket, and the committee thus chosen brought in a unanimous report as above.

PROFESSOR WOODWARD, OF ST. LOUIS, REVIEWS THE SITUATION.

The antagonistic reports of the first committee were presented to the School Board of the city November 17, 1885, and the matter occupied the attention of the Board for several weeks and filled considerable space in the newspapers. In accordance with the passage of the resolution referred to, Dr. Grady's connection with the school terminated early in January, 1886. Professor C. M. Woodward, principal of the Manual Training School of Washington University, St. Louis, after which the Baltimore School was largely modelled, reviewed the case in the columns of the St. Louis Globe-Democrat. Two of the points made, since they apply to all similar schools, are quoted:

> Again, the teachers were overloaded. A force of five teachers was given one hundred and fifty pupils, while the maximum should not have exceeded one hundred and ten. It has always been distinctly stated that one reason for the increased expense of a manual training school compared with a boys' school of the same grade with the manual elements omitted, arises from the increased number of teachers required. In the St. Louis Manual, there are eleven teachers to two hundred and thirty boys. * * *
>
> One committee reported to the School Board that, as the boys have at least a good grammar school education, manual training should be made the principal, and literary training the incidental feature, and the latter only in so far as it may be auxiliary to the great object of the school. This committee evidently consider the great object of the school to be to make mechanics with a minimum of literary and scientific cultivation and a modicum of military discipline.

He closes thus:

> A good school costs money, requires strong, well-trained teachers and a suitable school plant. Baltimore certainly cannot expect to maintain a good manual training school on any other plan.

Mr. Woodward also considered the placing the workshops in the basement of the building as a serious mistake. It should perhaps be stated that the building is on a hill side, so that part of the workrooms are on the ground level.

One of the features objected to was the military drill—it being claimed that the boys had exercise enough in their shop work, and therefore they did not require any special attention to physical exercise, as might be the case in ordinary schools.

It is quite likely that in the early weeks of the school, before the fitting up of the shops were completed, the attention given to drill may have seemed excessive.

In a recent visit to the school one of the masters expressed the opinion to the writer that the few moments of drilling in the open air, with which the shop work was formerly varied, was most advantageous, basing his opinion on the fact that since it was discontinued there had been much more complaint by the boys of headache and indisposition. He thought the relief from the close air heated by the forges, and from the noise of the machinery, obtained by the few minutes of drill in the open air, more than compensated, in the increased vigor of the boys, for the time allotted, while the influence of the military drill upon the carriage and bearing of the boys, and the good effect of the discipline, was apparent.

As the difficulties and conflict of opinion which have arisen in the case of this experimental school are liable to occur in any similar undertaking, it has seemed proper to briefly refer to them. Of course from these events it was quite likely to be assumed that the school was a failure, but it is by no means so regarded by those best acquainted with its progress, as will be seen by the following extract from the Annual Report of the State Board of Education for 1885:

> MANUAL TRAINING SCHOOL.
>
> The Manual Training School of Baltimore was opened in March, 1884, with sixty-two pupils on the roll during the first month. In September, the number was one hundred and fifty,—more than the school could properly accommodate. In September, 1885, the number was one hundred and twenty. As a full account of the school was given in the last annual report, it need not be repeated here. It has been reported that the school is a failure. Nothing can be further from the truth; it has been a distinguished and pronounced success. A new enterprise like this cannot be perfect from the start; some mistakes must be made. Time must be allowed to detect the mistakes and remedy them. There was no exemplar which the school could safely copy; it had to work out its own salvation. Unfortunately a disagreement arose between the director of the school and some members of the committee in charge. In consequence, the Board of School Commissions appointed a new committee and a new director, and the work goes bravely on. Mistakes may be made again, and again repaired, but there will be no "failure."

THE SCHOOL AS REORGANIZED.

The "Second" catalogue of the school (1886) gives for the session of 1886–'87 a list of four teachers, namely, John D. Ford, Passed Assistant Engineer, U. S. Navy, Principal; Asbury N. Ebaugh, First Assistant; William Dugent, Instructor in Metal Department; and James H. W. Onion, Instructor in Wood Department, with a total of 108 students in the three classes; 38 "first year," 32 "Intermediate," and 38 "second year."

Principal Ford's annual report to Henry A. Wise, Esq., the City Superintendent of Public Education, under date of December 31, 1885, records additions to the plant of machinery, etc. As the subsequent reports in the third and fourth annual catalogues of the school (1887, 1888) follow, with the programmes of studies, etc., only these two paragraphs are quoted from the Principal's report for 1885:

> Since the opening of the school in September (1885) the programme of studies has been changed and the students of "A" and "B" classes have had two recitations each week in geometry and physics, and one each week in the mensuration of surfaces and solids.
>
> Instruction has been given daily in marching and the manual of arms; the progress made has been entirely satisfactory.

THE THIRD YEAR OF THE SCHOOL.

The Third Annual Catalogue* contained the full list of studies and daily exercises and also several pages of illustrations; these last, which show the elevation of the building, plans of the class and work rooms, and illustrate the lessons in wood and iron working, are here necessarily omitted.

The Annual Report made by the Principal, in which is set forth the work of the pupils and the development of the school; the list of the names of the Committee of the Board of Education who exercise direct supervision over this school, and the list of Instructors, follow:

REPORT.

MANUAL TRAINING SCHOOL,
Baltimore, December 31st, 1886.

GENTLEMEN: In compliance with the regulations for the government of the Manual Training School I have the honor to submit the following report of its condition and needs.

The progress of the students during the past year has been for the most part satisfactory, and the general growth and development of your plans are encouraging.

The condition of the school is good.

By steady adherence to a conservative policy it has been possible, while gradually shaping the course of instruction and discipline, to equip the school with tools and other necessary plant.

On taking charge of the school January 11, 1886, there were 94 students on roll, since which time 31 have been admitted by transfer from other schools and 59 by permit; 34 have been withdrawn from the school, leaving 150 on roll at the close of the year; 29 are in the senior class, 33 in the second year, and 88 in the junior classes.

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*Third Annual Catalogue of the Baltimore Manual Training School. Baltimore: John Murphy & Co. 1887. Pp. 30.

Owing to the increase in the first year classes, Mr. W. H. Hall, a graduate of the City College, was temporarily employed as an assistant instructor in the literary department.

Many boys that the school is designed to benefit cannot spare the time, from fourteen to seventeen years of age, to attend, as they are necessarily withheld or withdrawn to assist their families as bread-winners. I therefore recommend the formation of a preparatory class, to be composed of boys between the ages of twelve and fourteen years, to be instructed in the care and use of tools and in freehand and geometrical drawing for two hours each day, the remaining portions of the day to be devoted to regular literary work. This plan would not involve any additional expense except for teaching force.

WHAT THE GRADUATES ARE DOING.

Of the thirty-four young men who have been withdrawn from the school during the past year, seven are learning the trade of machinist; four the trade of carpenter; one car-building; one carriage-making; one watch-making; one dentistry; one apothecary; one cigar-making; three are in business colleges; one Lehigh University; one in the real estate business; one in furniture store; one in book store; one in broker's office; one in dry goods business; one is a messenger in the postoffice; and the occupations of six are unknown. The employers of these young men speak of them in the highest terms, and there are desirable applications enough on file for students to justify the belief that all the graduates of next year can be well placed, where their worth will be appreciated and opportunities given for advancement.

IMPROVEMENTS IN THE BUILDING — ADDITIONS TO PLANT.

During the summer vacation partitions were removed from the main floor, changing three small rooms into one bright assembly-room; partitions and stairways were removed from the forge shop and steam heaters put in; the power tools and steam heaters in machine shop were rearranged and gas was introduced; an annex, 15 by 20 feet, was erected in the north yard and troughs for moulding and benches for soldering and brazing were set up in the place.

A Putman metal planer; four 12-inch swing, screw cutting engine lathes; twenty-five sets of tools for moulding; twenty-five sets hand tools for soldering and brazing; necessary bench tools; a chemical outfit and photograph apparatus, besides fifty volumes for the library, have been added to the school plant.

The school plant now consists of one twenty-horse-power steam boiler; one ten-horse-power steam engine; ten 12-inch swing, screw cutting engine lathes; one power drill press; one emery grinder; one 6-inch shaping machine; twenty-five vises; twelve forges; five 6-inch swing, turning lathes; eight 16-inch pattern-makers' lathes; one scroll saw; one circular saw; one 30-inch band saw; sixteen carpenter's benches; four cabinet-maker's benches; one printing press; one hand drill press; one type-writer; seventy-five complete sets carpenter's bench tools; ten sets wood turner's tools; thirteen sets blacksmith's tools; twenty-five sets machinist's bench tools; twenty sets machinist's power tools; twenty-five sets moulder's tools, and twenty-five sets tools for soldering and brazing.

The physical laboratory contains an ordinary college set of physical, chemical, and photograph apparatus.

WORK OF THE YEAR.

The junior classes have had daily instruction in the care and use of carpenter or blacksmith's tools, sketching or geometrical drawing, and twice a week in arithmetic, algebra, geometry, history, geography, physiology, and physics.

The second year class in the care and use of wood-turning, pattern-making, or blacksmiths' tools, and in chipping and filing, geometrical or mechanical drawing, arithmetic, algebra, geometry, trigonometry, history, geography and physics.

The senior class in algebra, trigonometry, history, English language, book-keeping, chemistry, physics, and steam engineering, mechanical or architectural drawing and machine designing, including the necessary calculations. The members of this class are engaged in finishing up tools for use in the school and building an 8 by 12 inch cylinder steam engine for their graduating work.

The school day is divided into three parts of about two hours each. Each student has about two hours each day in literary work, two hours in the shops, and two hours in the draughting room and mathematics or in the physical laboratory.

No shop work is undertaken until the drawings and calculations are made. The plan adopted at the opening of the school for drawing has been adhered to, and the results are satisfactory.

There has been no military drill since January, 1886.

The school does not teach trades. Its aim is more comprehensive—it lays the foundation for many trades, and at the same time recognizes the value of intellectual discipline.

Two students from each class, for two weeks each, have charge of the boiler and engine.

Two students from each class prepare the paper and make blue-prints; photographs; practice on the type-writer; telegraph apparatus; the cyclostyle and in the printing office, until a reasonable degree of proficiency is attained, when their places are taken by others.

Book-keeping has been taught to the individual members of the senior class from text-books. During the next half year it is proposed to arrange them in firms and have the books kept in relation to general business.

Experiments in physics and chemistry have been made before the classes; it is proposed to have each student make the experiments in the laboratory under the care of an instructor.

The scientific papers subscribed for for the school are circulated amongst the students on Friday afternoons for Saturday reading, and it is astonishing how they are sought after.

EXCURSIONS.

The following visits of inspection have been made by the students during the past season: To the Mount Clare Shops, Baltimore and Ohio Railroad; Asphaltum Works, Western Maryland Railroad; E. J. Codd & Co.'s Engine and Boiler Works; Mount Vernon Shops, Northern Central Railroad; Shops of the Harlan and Hollingsworth Co., Wilmington, Delaware. These visits enlarge the ideas of the boys and give them instruction of a practical character that cannot be had in any other way.

On June 9, 10, and 11, the third exhibition of the students' work was held in the school building and attracted much attention, the rooms being filled with officials, parents, and invited guests each day. On the last day of the exhibition a case of fine drawing instruments was awarded to Masters Hahn, Piez, and Bigelow for best drawing, and to Masters Ehlers, Pennington, and Ford for greatest improvement in drawing.

Specimens of drawings and shop-work have been sent to the school authorities at Concord, New Hampshire; the McDonogh School; the State Teachers' Association, Pittsburgh, Pennsylvania; and a complete exhibit of the first two years' course at the school was placed on exhibition in the museum of the Industrial Education Association of New York City, where it attracted much attention.

I am greatly indebted to my associates for their zealous and efficient co-operation in everything connected with the administration of the school; and before closing, must again bear testimony to the zeal and enthusiasm of the students, who give up their well-earned holidays to do work in the school, which saves the city a large amount of money.

Very respectfully,

JOHN D. FORD,
P. A. Engineer, U. S. Navy, Principal

THE BOARD OF PUBLIC SCHOOL COMMISSIONERS OF BALTIMORE CITY.

MANUAL TRAINING SCHOOL.

COMMITTEE OF BOARD OF SCHOOL COMMISSIONERS.

J. B. WENTZ, Esq., Chairman.

F. G. CONNOLLY, M. D.
J. W. KINES, Esq.
J. T. MORRIS, Esq.
JOSHUA PLASKITT, Esq.

LIST OF INSTRUCTORS.

SESSION 1887–'88.

Principal: JOHN D. FORD, Passed Assistant Engineer, U. S. Navy.
First Assistant: A. NEWTON EBAUGH.
Instructor in Metal Department: C. F. FRIESE.
Instructor in Wood Department: WILLIAM DUGENT.
Assistant: WILLIAM H. HALL.
Instructor of Music: CHARLES F. PERCIVAL.

THE FOURTH YEAR OF THE SCHOOL.

The Fourth Annual Catalogue (1888),* in which is recorded the history of the school for the year ending December 31, 1887, indicates, by its increased size, that the growth of the school continues. The pamphlet contains, besides the customary schedules of studies, lists of officers and students, and annual report of the principal, copies of the graduation examination papers given to the last class; from which the kind of education which goes on in this school, hand in hand with the training in drawing and in wood and metal working, can be readily ascertained. These papers comprise problems and questions in Arithmetic, Algebra, Geometry, Mensuration, Trigonometry, Book-keeping, Physics, Chemistry, English Literature, History, Steam Engineering and Drawing.

The boys completed "a nine by twelve inch cylinder engine," to be used in the shop. The work done on this engine by each one of the graduates is recorded in the report. The "Salutatory" address by Joseph H. Kuehn, and the "Valedictory" by James B. Scott, are also given, as well as the "Honorary" address delivered by Mr. Richard Piez, a graduate of the school, who has been appointed an instructor in the school. From this brief but admirable address I quote a few sentences, both because they are indicative of the spirit inculcated in this school, and also, for the succinct statement they contain of the reasons which are held by many to justify the establishment of such schools as an integral part of a system of public schools.

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*Fourth Annual Catalogue of the Baltimore Manual Training School. Baltimore: William J. C. Dulany & Co. 1888. Pp. 49.

In the course of his address Mr. Piez said:

> * * * The old schools have done and are still doing a wonderful work, but a new want has arisen—other powers are demanded and must be cultivated. We do not want less of the old schools but more of the new. We want schools where the eye and the hand as well as the brain can be trained.
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> * * * * * * *
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> It seems to me that no better protection can be given to labor or to employers of labor than the establishment of industrial schools in our country. This they are doing in Europe in order to protect themselves against the competition of the United States. Let our country do the same and then we will not have to go across the water for our skilled mechanics.
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> * * * * * * *
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> The object of all training is not the finished product but the development of the individual. That training is best which brings into exercise all these powers—which trains the eye and hand and brain equally and harmoniously. A boy is learning as much when he is swinging the sledge as when he is studying the theory of the expansion of heat, and at the same time he is gaining that which will make him quick and apt and will give him an experience which will be of use to him throughout life. In this age of machines it is necessary that every one to some extent should be a machinist and it is especially necessary that all who expect to become mechanics should bring to their work a high degree of skill and a large stock of intellectual attainments. At this time it is impossible to obtain these elsewhere than at school. We have no more of the apprenticeship system so it becomes necessary that instruction in the principles of the Mechanic arts should be gained elsewhere. Six months training in a well equipped school would be worth more than all that could have been obtained in the whole four or five years of the apprenticeship system. We do not contend that our schools should undertake to teach trades, but that they should give the broadest hand-culture with that of intellect. It is an education of the boy's faculties and will aid him whether he follows the life of a mechanic; a life of commerce or any other life. This kind of training discovers to a boy his special aptitude and enables him to determine the calling for which he is best suited. When a boy once knows what he can do well and therefore what he likes to do, he has made a long stride towards success. The only justification for public schools is in the necessity of making out of the raw material life-citizens who shall be productive factors in the material wealth and conservators of order. This principle was forcibly impressed upon us a few days since by his Honor, the Mayor, in an address to the boys.
>
> If then our schools are justified in giving purely mental training, how much more are they justified in training powers by which self support is won and wealth added to society.

It will be noticed that in the Third Annual Report the Principal urged the formation of a preparatory department, for boys between the ages of twelve and fourteen years. This recommendation was adopted, and the present Report states that one hundred and fourteen boys are in that department, and gives a schedule of their studies. This schedule will be given here in connection with those of the Manual Training School proper. The establishment of this preparatory course is, on the one hand, an endeavor to reach the boys who will leave school before they are fifteen, and on the other it will the better prepare those who propose to take a complete course in the Manual Training School. This experiment with the boys who expect to leave at the earlier age should be of interest to all educators who desire to see industrial training put in the schools of all grades; for it can be done at comparatively little cost, and would be even practicable in many small village and country schools. It also affords an opportunity to practically test the theory that parents who need the aid of their children will be willing to let them remain longer in school if they find they are receiving such training as it is here proposed to give.

We have seen that State Superintendent Newell, in his Annual Report for 1884, urged the opening of evening classes for Manual Training; Principal Ford, in his present report, urges the authorization of such classes. He also suggests a two years' post-graduate course in Mechanical Engineering. All these activities are indications of a healthy condition. Growth implies vitality, and the Baltimore Manual Training School, which seeks at once to grow in every direction, gives indication of vigorous health.

The preliminary pages which contain the record of the official acts and correspondence which led to the establishment of the school, include in this fourth annual report the official correspondence which led to the detail by the Navy Department of Engineer Ford to the Baltimore Manual Training School in 1884; which detail is still continued. The Report of Principal Ford, which summarizes the history of the school for the year ending December 31, 1887, is here given in full. An interesting feature of these reports is found in the record of the graduates, showing that most of them follow the callings for which their school training has been a special preparation.

The press notices, which follow, of the anniversary addresses in March, 1888, and of the commencement exercises in June of the same year, show the interest taken in the school by the citizens. The extracts from Principal Ford's letters of July and October, 1888, give the latest account of the success and promise of the school.

The detailed courses of instruction and financial statistics of the school with which this account closes are taken from the latest published catalogue.

PRINCIPAL FORD'S REPORT.

BALTIMORE, *December* 31, 1887.

GENTLEMEN: In compliance with the regulations for the government of the Manual Training School I have the honor to submit the fourth annual report of its condition and needs.

The progress of the students during the past year has been satisfactory.

At the close of last year there were 150 students on roll, since which time 44 have been admitted by transfer and 159 by permit, making the total number in the school during the year 352, of whom 25 were graduated, and 55 were withdrawn from the school, leaving on roll at this time 273; 29 are in the senior class, 36 in the second year class, 94 in the first year classes, and 114 are in the junior or preparatory classes.

THE FIRST ANNUAL COMMENCEMENT.

The first annual commencement exercises of this school were held in Ford's Grand Opera House, on the night of June 27, in the presence of a large and appreciative audience. Twenty-five graduates received their diplomas from the hands of the mayor, Hon. James Hodges. The addresses usual on such occasions were delivered by Hon. James Hodges, Hon. John B. Wentz, Hon. William H. Legg, of Queen Ann's County, and Hon. John L. Thomas, Jr. The young gentlemen had on the stage a nine by twelve inch cylinder engine as their graduation work in the mechanics' art.

WHAT THE GRADUATES ARE DOING.

Of the twenty-five young men who graduated on this occasion one is an instructor in the school, one civil engineer, two electrical engineers, one marine engineer (now at sea), one house carpenter, two pattern makers, one draughtsman, one farmer, one car builder, one machine supply store, one architect, six machinists, one student, and two are in mercantile pursuits, all with bright prospects for a useful and prosperous future.

Of the fifty-five students who have been withdrawn from the school during the year all but six are following mechanical pursuit.

The course of study and of shop work as laid down in the catalogue of the school has been strictly adhered to and the results are satisfactory. The members of the present senior class are each making a hand hammer, a pair of chisels, and a pair of calipers, all to be finished in the best manner. When these are finished the class will together build a six by nine inch horizontal cylinder steam engine from their own drawings and patterns.

IMPROVEMENTS AND ADDITIONS.

During the summer vacation the remaining partitions were removed from the main floor, making a handsome assembly room with a seating capacity for three hundred and fifty students. Additional desks, steam and gas fixtures were arranged in the new part of this room.

The nine by twelve inch cylinder steam engine which was built by the members of the graduating class from their own drawings, was set up in the shops in the place of the old one. It does the full work, is noiseless in its operation, and has proven that it was well made and correctly adjusted.

The fourth floor was fitted for four recitation rooms, with a seating capacity for fifty students in each room. The small, west room was arranged for the library, and the main room was fitted as an exhibition room where the entire work of the school for the year was put on exhibition, the intention being to make the room accessible to all who feel an interest in the work of this school, and the cause of Technical Education, where the work as it is done here and the literature on the subject could be studied side by side.

NEED OF ADDITIONAL ROOM.

On the re-opening of the school in September students came to us in such increased numbers that the exhibition room had to be converted into an additional wood working shop for their accommodation, the work from this room being stowed away in the library for safe keeping; rendering the book cases inaccessible. Thus we have necessarily abandoned two important adjuncts to a manual training school, the library and the exhibition room; besides, having a wood working shop on the fourth floor adjoining recitation rooms disturbs the instructors and students as well as interrupts the work in the lecture room on the floor below. Additional drawing room is needed now, and there is no proper place in which to set up our printing office. Classes have been at work in the annex in the north yard. If we have the same increase in numbers in February and September of next year as we have had this year, it will be a problem, what to do with the boys?

A suitable lot should be secured at once and a building for shops erected upon it; the present building to be retained for the literary work, drawing and the chemical and physical laboratories. The adjoining property on Courtland street would be entirely suitable for the purpose of the school.

THE GROWTH OF THE SCHOOL HAS BEEN.

Students on roll:	
March, 1884	62
June 30, 1884	100
December 31, 1884	147
June 30, 1885	112
December 31, 1885	94
June 30, 1886	110
December 31, 1886	150
June 30, 1887	204
December 31, 1887	273

Owing to the increased number of students Mr. Richard Piez—a graduate of this school—was appointed an instructor in the mechanical department, and Messrs. A. J. Peitsch and J. C. McSherry were appointed instructors in the literary department of the school. In this connection I wish to express my thanks to all the instructors for their hearty co-operation and their untiring efforts to elevate and improve the classes under their care and thereby ensure the success of the school.

Death has taken from our side Dr. Charles F. Percival, who by his worth and kindness had endeared himself to all; whether instructing the boys in his loved science of music, or in the field with the battalion, he was always the same pleasant gentleman whom all delighted to follow, and whose memory we shall always cherish.

PREPARATORY DEPARTMENT.

A junior or preparatory department was established after the re-opening of the school in September. Boys from the sixth grade of a Grammar or "Public School" were admitted to this department. One hour a day is devoted to manual work, and forty-five minutes to free-hand drawing; the remainder of the school day is devoted to the regular academic work of their grade. There are now one hundred and fourteen boys in this department and they are making good progress.

EVENING CLASSES.

Many written and verbal requests have been received for the organization of evening classes in manual training, and I recommend that such classes be authorized; the plant and tools belonging to the day school could be used; the additional cost would be for instructors, books, material used for lessons in the work shops and drawing room, and for the gas. I also recommend the establishment of a two years' post-graduate course in mechanical engineering; the entire cost of such class would not exceed three hundred dollars per annum, and its value would be incalculable in holding our young men to habits of study after severing their connection with the school.

Interesting visits of inspection have been made on Saturdays and the boys have been much improved by their acquaintance with work on a large scale.

A course of popular scientific lectures has been inaugurated for the benefit of the students and their friends. These lectures have been delivered on alternate Friday evenings and are largely attended. We are greatly indebted to Dr. Powhatan Clarke, and to Professor Philip H. Friese of the City College for their kind assistance.

The school plant has been added to in all departments but much is still needed on account of the increased number of students.

It only remains to express my high appreciation of the active interest the Committee on Manual Training has taken in our welfare; and to extend to the officers and members of the School Board my thanks for their uniform courtesy.

Very respectfully,

JOHN D. FORD,
Engineer Corps, U. S. Navy, Principal.

THE BOARD OF PUBLIC SCHOOL COMMISSIONERS, BALTIMORE CITY.

THE SCHOOL IN 1888.

The anniversary of the opening of the school has been annually commemorated from the first as an occasion for the assembling at the school building of those interested in the school. The Baltimore Sun of March 6, 1888, published a very full account of the celebration of the fourth recurrence of this anniversary on the previous day. The following extracts are taken from this account:

There was a large attendance of visitors, including many ladies. The legislative committee on public institutions was represented by Dr. C. S. Adams and Mr. C. Ridgely Goodwin, of the Senate, and Messrs. O. H. P. Clark, P. A. Scaggs, John McKnight, and George W. Hatch, of the House of Delegates. Among others present were Messrs. Cecil J. Karsner and John W. Carter, of the city council; James Mitchell, S. F. Felber, O. B. Zantzinger, S. F. Sharretts, school commissioners; Gen. George H. Steuart, Dr. Eli J. Henkle, Superintendent Henry A. Wise, T. S. Shinoda, Tokio, Japan. The visitors were courteously received by Lieutenant John D. Ford, principal of the school, and shown through the building.

After the inspection of the premises and the works of the students the visitors filled the large auditorium to overflowing to hear addresses and music. A number of the boys appeared at their desks in their working costumes of white. Mr. Joshua Plaskitt presided. After saying the school opened four years ago with 25 scholars, he introduced General B. T. Johnson, who on the occasion of the first opening had made an address.

General Johnson called attention to the change of education necessitated by changed and changing circumstances of the present day. He closed his address with a tribute to Mr. Plaskitt as the founder of this school.

Professor M. A. Newell read extracts from a tract of his, published eleven years ago, to show that he was a pioneer in the manual training school advancement, and he also made some remarks.

Mr. John T. Morris said General Johnson had expressed the feelings of the community towards the school. The institution had made great progress and will do even better in the future. The progress was due both to teachers and students. There was never a more efficient, painstaking, careful corps of teachers, nor better or more earnest pupils. Reference to Lieutenant Ford and his assignment to the work was greeted with applause. Much of the success of the undertaking was attributed to the press. An interesting sketch of the history of the school was given.

This historical statement is here omitted, as the facts which it embodies are to be found recited at length in this present history of the school.

Mr. John T. Ford, who was introduced by Mr. Plaskitt as having educated more boys in the public schools than any one in Baltimore, and as having a son in the Manual Training School, made an address which was much applauded. * * *

Mr. John L. Beck, first year pupil, gave music on the violin, Theodore Dietrick played the cornet, and Professor J. H. Deems the piano. The school had holiday for the rest of the day.

The article closes with the following concise description of the building, of the display of pupils' work and of the pupils as seen at work:

On the fourth floor of the building occupied by the training school are four classrooms, in which the students are instructed the same as in ordinary public schools, about two-thirds of the day being spent in such general intellectual work. An adjoining room is for free-hand drawing and general mechanical designs. In this room are collected samples of mechanical work in carpentry, wood turning, pattern making, tin and sheet metal work, vise work, chipping, filing and blacksmithing, all highly creditable. On the third floor is one of the finest physical and chemical laboratories in the State. Practical chemistry is taught, such as will be of use in daily active life. Each boy has his Bunsen burner, test tubes, reagents, &c., and makes his own analysis. The older boys make their own experiments in physics, while the younger ones have lectures on the subject in an adjacent hall. A photographic room and outfit constitutes part of the department. The principal drawing-room is on this floor.

The entire second floor is occupied by the assembly hall, where each boy has his place. This room shows all the different kinds of work done by the scholars, from articulating a human skeleton to the finest drawing. In the basement are situated the carpenter, machine, blacksmith, turning shops, and in the yard the molding shop. Each boy must take his turn in these shops, each of which admits of twenty-five working at once. They were seen at work in their white duck working suits, ranging in age from 14 to 25 years, and presented a most interesting appearance. The departments in the basement and the drawing-room present the most attractions for the boys. Even if slow at intellectual work a boy is seldom found dull in the work shops. The machine shop with its 10 lathes, 40 vises, planer, shaping machine, drill press, &c., where a 10-horse-power engine is being built, was a busy scene. The blacksmith shop with thirteen forges going, a smith and helper working at each, was a noisy place. In the adjoining pattern-making shop eight lathes, scroll saw and band saw were running cheerily. On the opposite side of Courtland street the school has an annex, with carpenter shop and sheet metal working shop."

From the editorial comments by the Sun on the significance of the meeting reported in its columns the following extracts are taken:

IMPORTANCE OF MANUAL TRAINING SCHOOLS.—The fourth anniversary of the Baltimore Manual Training School, which was celebrated yesterday, illustrated in a striking way the progress we have made in this advanced mode of practical instruction, and the advantages of the system over the old mode of preparing the young for the battle of life. In the rapid march of progress which distinguishes this era of steam and electricity, it is necessary to equip each succeeding generation in accordance with the requirements of the hour, and if it is not done, the community of which they are a part is bound to fall behind others which are more progressive.

The changes resulting from the ever widening uses of steam and electricity are stated with the need for radical changes in the education of boys which they have made necessary; since, at the same time that they "widen the opportunities for employment," they make it imperative that there shall be a radically different education given to the boy from that which sufficed in the days before their discovery. In reference to this present demand for technical training the Sun says:

> * * * A good many cities of the country have been in advance of Baltimore in training and technological schools, but every year the distance is lessened. For advanced students we are not behind. The physical laboratories of the Hopkins University are among the best equipped scientific schools in the United States, and attract students from all parts of the country. But we have only one manual training school, which forms a part of the public school system of the city. In this school there are over three hundred pupils, and it has been deemed necessary to provide larger accommodations to meet future demands upon its work shops and class rooms.

The Baltimore Sunday Herald in its issue of March 18, 1888, also published an interesting descriptive article on the Manual Training School and its work, giving a concise history of its origin and of its successful progress. The article was illustrated with views of the busy work shops in which the boys are seen actively engaged in all the various manipulations incident to wood and metal working. The article closes with emphatic commendation of the purpose and efficiency of the school as follows:

> It is an interesting sight to watch the boys at work. All are busy. There are no drones in the hives. In the work shops may be seen boys engaged in carpentering, wood-turning, swinging the sledge or in the construction of some useful machine or appliances. Others are to be found seated at their drawing-desks, designing machines or making plans of buildings. In the laboratories, classes are engaged in analyzing substances, compounding chemicals or making experiments in physics, while others in other departments are pursuing literary work.
>
> The Baltimore Manual Training School, after four years of existence, has proven the wisdom of its projectors. In teaching the foundation of trades—in developing the mind and teaching the hand to be skillful; in fitting the youth of the city for useful, prosperous and industrious lives, it becomes a noble mission. That it will be appreciated when its objects and the character of its work become thoroughly known, none can doubt.

Supported by public interest which is thus awakened and informed by the influential journals of the city, this school seems already to have passed beyond the experimental stage and to have taken its place as one of the recognized departments of the city system of free schools; to be sustained and developed as its needs require, and as a matter of course. Its growing success has entailed continual addition to the force of teachers and to the plant of machinery, while more room is now required to accommodate the increasing numbers of pupils. This need of additional ground and buildings is emphasized in the article just quoted from the Sunday Herald.

The exercises of the Second Annual Commencement of the School were held in Ford's Grand Opera House on Monday, June 25, 1888, at 8 p. m. There were twenty-three graduates. The following extracts, giving an account of the proceedings, are taken from the article in the Baltimore Sun of June 26:

The house was crowded upon the lower floor and in the gallery with friends of the school, and their tributes of flowers decorated the entire foot-light edge of the stage, which was prettily set with a woodland scene. At the back of it was a workshop setting filled with the work-benches, anvils, forges and tools of the school, and the engine in action which was built by the pupils. The graduates were arranged on the left of the stage, while Principal John D. Ford sat in the centre, with Mayor Latrobe at his right. Colonel John L. Thomas and Colonel W. H. Legg sat with them. On the right of the stage were the assistant teachers of the school, Messrs. A. Newton Ebaugh, William Dugent, Christopher F. Friese, William H. Hall, James McSherry, William G. Richardson, Richard Piez, Lawrence Griffith, and A. J. Pietsch.

On the stage also were the school board committee of the Training School, Messrs. John B. Wentz, Joshua Plaskitt, S. L. Felber, and O. B. Lantzinger; also, Mr. J. C. King, Dr. F. G. Connolly, John P. Poe, Rev. David Philipson, Professor Henry A. Wise, Nelson Baker, Joshua Lynch, Professor Otto Fuchs, Professor Richard N. Preece, Professor William F. Wardenburg, Professor William Elliott, Jr., Professor William H. Tolson, Professor A. L. Milles, Mr. Francis J. Ruth, Professor Jacob Goodman, Colonel J. W. Minifie, David Abercrombie, and Professor J. Harry Deems.

The programme consisted of prayer by Rev. I. C. Burke, followed by an anvil chorus in the workshop by the boys; salutatory address, O. C. Wicks; honorary address, William Johnston, Jr.; announcement of graduates, Mr. John B. Wentz; valedictory, Edward B. Passano; address to graduates, Hon. F. C. Latrobe; address, Colonel W. H. Legg; address, Colonel John L. Thomas; distribution of certificates, Mayor Latrobe, and benediction. A fine orchestra interspersed the exercises with operatic selections.

ADDRESS BY THE MAYOR.

In his address to the graduates, Mayor Latrobe said: "It was not until the year 1883 that the Mayor and City Council officially recognized the fact that a knowledge of some industrial labor is as necessary as a knowledge of books, and, as the State and city admit their obligation to teach children to read and write, they can not deny their obligation to teach them to work, as the latter is as essential as the former. And now that intelligent people recognize the fact that manual labor is not degrading, and that those who have done most for the comfort and happiness of mankind have been the producers of mechanical results, it becomes manifest that all systems of public education should embrace manual as well as mental training. We live in a mechanical age; we are nearing the close of the nineteenth century. Whatever surprises the twentieth may have in store, the steam century, as it may be called, will record an extraordinary progress in the history of the human race. It is strange for how long a time mechanical intelligence lay dormant. When Watt first noticed the lid of the kettle rise and fall under the pressure of escaping steam, he little thought he was on the threshold of a secret whose discovery would produce in the world the results due to the utilization of steam as a motive power. From the days of the Pharaohs kettles had been boiling and steam escaping from their spouts or lids, and yet not all the intelligence that built the pyramids or made Rome the mistress of the world was smart enough to discover in that homely utensil the embryo locomotive and steamboat. The lightning had rent the thunder-cloud since the days of creation. Amid its flashes Moses had received the law on Sinai, and yet the practical use of electricity lay hidden in nature's storehouse long after Columbus had discovered a new world, and until after the eighteenth century and liberty had produced a Franklin to bring it from the clouds, and the nineteenth a Morse to make it a slave to man's will. In large cities the demand for skilled mechanics is far greater than for laborers in the so-called learned professions, already overcrowded and offering few opportunities for success. The field for mechanical knowledge and skilled manual labor is practically inexhaustible. Let us, therefore, who feel an interest in the future of Baltimore recollect that while its university, schools, libraries, benevolent institutions, monuments, and harbor may make it a community of learning, refinement, charity, patriotism, trade, and commerce, it is necessary to provide for its growing population ample means for obtaining mechanical instruction and manual training, the capital of the skilled laborer and the foundation of those industries which will surely make our city prosperous."

Mr. Wentz said: "To Baltimore is all honor due. She was the first city in the world like Solomon to set the artisan upon the throne. The manual training school is a people's institution. It was not the eleemosynary bounty of some rich man who wrung his millions from the people, but it was established and is supported by the tax payers. We have a right to be proud of a school in which the artisan is enabled to be intelligent as well as industrious."

Under date of July 28, 1888, Principal Ford, in response to the request of the author, has kindly furnished the following further information relating to the school, epitomizing its progress during the past year and its promise for the ensuing year. He writes:

> There are several additions to the teaching force over the previous year, made necessary by the large increase in the number of students.
>
> During the year we have been steadily increasing the plant and facilities of the school as funds would permit. The adjoining property has been purchased and we will soon have a new four-story building, 60 by 90 feet, *to be used entirely for school shops*. The literary work, drawing, and physical and chemical laboratories *to remain in this building.*
>
> A class in mechanical engineering, for graduates of the manual training school, has been ordered by the Committee, and we will begin its work in September. There are now forty applicants for places in the class. * * *
>
> We closed the session with 338 boys on roll.
>
> It has been hard, up-hill work, but the school is now a success; the work all through is original in connection with the public school system and I think we can safely be followed.
>
> We have sent out two classes of graduates whose worth is already acknowledged and appreciated by their employers and friends.

It will be observed that the new building is promised and that the suggestion made by the Principal, in the last Annual Report, as to a post-graduate class has been adopted. It is little wonder, with such prompt and liberal support as has been extended to the needs of this experimental school by the public school authorities of Baltimore, that the school has scored such a success. To other communities considering the advisability of following the example of Baltimore in founding for themselves a similar public Manual Training School, this essential factor of success, namely, the prompt, generous response by the school authorities to the reasonable demands of such a school is commended.

Without the hearty support which in this instance has been given by the city authorities this experiment must have failed. Such a Manual Training School cannot be established without a large initial expenditure for the plant of machinery. Its very success will add directly to the cost of supporting it. The Baltimore Manual Training School,—the first school of its class to be incorporated into the public school system of an American city,—after an existence of five years, is regarded by those most familiar with its history, its methods and its results, as a satisfactory success.

It is purely and simply a public school, and, as such, everything relating to its origin, support, management, and development is of especial interest to all Americans interested in the development of public school systems. For this reason the details of its history and methods have been here given at length.

In a more recent letter inclosing the schedule of studies of the proposed post-graduate class in Mechanical Engineering, the Principal, under date of October 19, 1888, gives the following statement of the school, now that the work of the new school year (1888–'89) is fairly under way. The increase of pupils and teachers, and the need of additional room for the school, as shown by the occupancy of other buildings, fully justifies his statement that "the school has grown in favor." He says:

> "* * * We have 460 boys in attendance and could have double the number if we had the means to take care of them. The teaching force has been increased till we now number thirteen instructors. Wood Carving, and Printing, have been added to the course this year; and, on the first of November, we will begin work with a post-graduate class (of twenty-five members) in a two years' course in Mechanical Engineering. * * *."

The overflow of the school now occupies the old buildings on the three new lots bought, as stated in his letter of July, for the site of an additional building; another building in the neighborhood has also been rented for immediate use. The schedule of studies for the post-graduate class follows the schedules of the other classes given below.

The following details of courses of study, statistics, and list of officials are from the latest published catalogue for the year ending December 31, 1887:

BALTIMORE MANUAL TRAINING SCHOOL.

CONDITIONS OF ADMISSION TO THE JUNIOR OR PREPARATORY DEPARTMENT.

Boys who are pupils in the sixth grade of a Grammar or "Public School" for half a year or more, will be admitted without examination, upon recommendation of their principal. (Authorized September, 1887.)

SCHEDULE OF STUDIES OF THE JUNIOR OR PREPARATORY DEPARTMENT.

[Composed of Boys from the Sixth Grade of a Grammar or "Public School."]

FIRST YEAR.

Language.—Spelling, Oral and written exercises, Compositions including reproductions and abstracts of lessons in reading, geography and history. Studies of simple sentences, Analysis, parts of speech distinguished and used in constructing sentences. The gender, person, number and cases of nouns and pronouns, the comparison of adjectives and adverbs, the conjugation of verbs, punctuation.

Reading.—First steps in Scientific Knowledge, History of the United States.

Writing.—One writing book, each half year, copy short letters or notes.

Arithmetic.—Continued.

Algebra.—Commenced.

Geometry.—Definitions.

Geography.—Continued.

History of the United States.—Commenced.

Drawing.—Forty-five minutes each day—Sketching from models—Free hand drawing—Map of Maryland and of the United States.

Wood Work.—Seventy-five minutes each day, for twenty weeks, care and use of tools. Make ten lessons.

Sheet Metal Workers.—Seventy-five minutes each day for twenty weeks, care and use of tools and charcoal furnace. Make ten lessons.

Wood Work.—Seventy-five minutes each day. Twenty weeks.

Care and use of tools.

1. To lay off work.
2. Ripping and cross-cutting.
3. Planing, trueing up and bringing lumber to a width and thickness.
4. Nailing.
5. Mortise and Tenon.
6. Blind Mortise and Tenon.
7. Half Lap Joints.
8. Through Mortise and Tenon Rabbeted.
9. Dowel Joints.
10. Plain Box (6 by 4 by 2 inches) nailed together.

Sheet Metal Work.—Seventy-five minutes each day. Twenty weeks.

Care and use of tools, how to make and care for the fire in a charcoal furnace, how to lay off the work. Soft Solder.

1. Solder two pieces of tin together.
2. Groove and solder a seam.
3. Plain pipe, 6 inches long, 2 inches diameter.
4. Rectangular Pan, 4 by 8 by 1½ inches deep.
5. Square pipe, 6 inches long, 2 inches square.
6. Square box, with loose top, 4 by 2 by 2 inches.
7. Round Pan, 4 and 5 inches diameter, 1½ inches deep.
8. Elbow, Right Angle, 6–6 by 2 inches deep.
9. Tin Cup, 3½ inches diameter, 2 inches deep.
10. Butter Kettle, 8 by 5 by 5 inches deep. Tea or Coffee Pot, 3½–4 inches diameter, 6 inches deep.

SECOND YEAR.

Language.—Oral and written exercises, Work of the preceding year continued, Compositions, including abstracts of lessons in reading, geography and history, Social and Business letters. Study of easy complex and compound sentences, Analysis, Properties of the parts of speech continued, voice, mode, tense and the use of auxiliaries, Principles of syntax illustrated by familiar examples, Punctuation.

Reading.—Fifth Reader, History of U. S., Spelling, Supplementary reading, Reading compositions and other written exercises. Recitation of appropriate selections, Reading the foreign news column in the daily papers.

Writing.—One writing book each half year, Copying bills, writing in blank-books valuable extracts, compositions and reproductions.

Arithmetic.—Percentage continued, profit and loss, commission, interest, discount, stocks, insurance, ratio and proportion, taxes, thorough review.

Geography.—Rocky Mountains and Pacific States, Europe reviewed, Africa, Maps of Maryland and Africa.

History.—History of the United States.

Algebra.—Continued.

Geometry.—First two books.

Drawing.—Forty-five minutes each day. Free hand and Maps.

Wood Work.—Seventy-five minutes each day, for twenty weeks, care and use of tools, make ten lessons.

Metal Work.—Seventy-five minutes each day, for twenty weeks, care and use of tools, make ten lessons.

Wood Work.—Seventy-five minutes each day. Twenty weeks.

Care and use of wood worker's bench tools, bracket saw and foot lathe.

1. Bracket.
2. Combination Bracket.
3. Easel.
4. Fancy Frame.
5. Turning, Cylinder, Cone; Truncated Cone. Step Cylinder, Geometrical Form. Round Form, Table Leg.

Sheet Metal Work.—Seventy-five minutes each day. Twenty weeks.

Care and use of tools and how to lay out work.

Make and care for fire in furnace. Hard solder.

Tin a piece of brass. Tin a piece of copper. Join together.

Copper to copper, brass to brass, brass to iron, copper to brass, copper to iron.

1. Make a piece of copper pipe 6 inches long, three-quarters inch diameter.
2. Elbow, Right Angled, 4-4 by three-fourths inches diameter.
3. Copper Bowl, beaters, 6 inches diameter 3 inches deep.
4. A Brass Vase, beaten in halves and brazed together 8 inches high.
5. A Copper Vase, fluted, 8 inches high.
6. A checker board table, copper and brass. Hemisphere of copper, beaten, 6 inches diameter. A brass vase, beaten and brazed together, 8 inches high. Copper vase, fluted, 8 inches high. Checker board table, brass and copper.

BALTIMORE MANUAL TRAINING SCHOOL.

CONDITIONS OF ADMISSION (TO THE SCHOOL PROPER).

Candidates for admission must be at least fourteen years of age, and must present sufficient evidence of good moral character.

They must pass a satisfactory examination in reading, spelling, writing, geography, English composition, and the fundamental operations of arithmetic as applied to integers, common and decimal fractions, denominate numbers, and the extraction of the square and the cube root of numbers. Ability to use the English language correctly is especially desired. Boys fourteen years of age who are members of the City College or pupils in the seventh grade of a Grammar or "Public School" for half a year or more will be admitted without examination upon recommendation of their Principal.

No candidate who has been guilty of truant playing, or any other grossly improper conduct, during the scholastic year shall be examined or admitted without authority of the Committee on Manual Training School; and it shall be the duty of Principals to report all such candidates to the Committee for its action.

No student who has been removed from the Manual Training School shall be re-admitted unless by special action of the Committee.

The fee for use of tools, materials, and books for students who are children of residents or citizens of Baltimore has been abolished. The fee for non-resident students is $12.50 per quarter; in advance.

In estimating and accounting for scholars, Principals of Grammar or "Public

Schools" have the same credit for those sent to the Manual Training School as to the City College.

Calendar, 1888.

January	3.	School re-opens.
February	11.	Third term begins.
February	15.	Classes alternate in the shops.
February	22.	Washington's birthday.
March	3.	Anniversary of the opening of the school.
April	8.	Good Friday.
April	10.	Easter Sunday.
April	11.	Easter Monday.
April	26.	Fourth term begins.
April	27.	Examinations.
June	6.	Examinations.
June	15.	Exhibition day.
June	16.	Exhibition day.
June	17.	Exhibition day.
June		Commencement day.
June	30.	School closes.
September	1.	First term begins.
September	5.	School re-opens.
September	12.	North Point.
November	21.	Second term begins.
November	25.	Thanksgiving day.
December	25.	Christmas.

Register of students, 1887–'88.

A Class, third year, 28.
B Class, second year, 38.
C Class, first year, 48.
D Class, first year, 56.
Preparatory Department, E Class, 46.
Preparatory Department, F Class, 37.
Preparatory Department, G Class, 37.
Non-resident students, 32.

COURSE OF INSTRUCTION.

First Year.—Arithmetic, Algebra, Geometry, Mensuration, English Language, History, Geography, Physiology and Physics.

Drawing: Geometrical and Sketching.

Shop Work: Carpentry, Wood Turning, Forging, Proper Care and Use of Tools.

Second Year.—Algebra, Geometry, Plane Trigonometry, Mensuration, Physics, History, English Literature and Mechanics.

Drawing: Geometrical and Mechanical or Architectural.

Shop Work: Pattern Making, Vise Work, Welding, Tempering, Soldering and Brazing.

Third Year.—Geometry, Plane Trigonometry, Physics, Mechanics, Book-keeping, Literature, Chemistry, Political Economy, Geology, and Engineering.

Drawing: Machine, Architectural and Designing.

Shop Work: Machine Shop Work, Filing, Turning, Drilling, Planing, etc., Study of Machinery.

Throughout the course, about one hour per day will be given to Drawing, and about two hours per day to Shop Work. The remainder of the school day will be devoted to study and recitation.

SCHEDULE OF STUDIES.

C Class.—First Year.

Day of week.	Hours of study.		
	9 to 10.50 a. m.	10.50 a. m. to 12.40 p. m.	1.10 to 3 p. m.
Monday	Arithmetic	Shop Work	Geometry, Drawing.
Tuesday	Algebra	do	Physics, Drawing.
Wednesday	History, Geography	do	Mensuration, Drawing.
Thursday	Algebra, English	do	Geometry, Drawing.
Friday	History, Physiology	do	Sketching.

Shop Work equals one-half Carpentry and care and use of wood-working tools.
Shop Work equals one-half Forge Work and care and use of tools.
Geography and Physiology finished.

B Class.—Intermediate.

Day of week.	Hours of study.		
	9 to 10.50 a. m.	10.50 a. m. to 12.40 p. m.	1.10 to 3 p. m.
Monday	Geometry, Drawing	Arithmetic	Shop Work.
Tuesday	Trigonometry, Drawing	Algebra	Do.
Wednesday	Mensuration, Drawing	History, English	Do.
Thursday	Physics, Drawing	Algebra, Physical Geography	Do.
Friday	Sketching	History, English	Do.

Shop Work equals one-half Pattern Making and Wood Turning.
Shop Work equals one-half Forging and Vise Work.
Arithmetic and Geometry finished.

PROGRAMME OF STUDIES, 1887–'88.

A Class.—Third Year.

Day of week.	Hours of study.		
	9 to 10.50 a. m.	10.50 a. m. to 12.40 p. m.	1.10 to 3 p. m.
Monday	Shop Work	Physics, Designing	Book-keeping.
Tuesday	do	Trigonometry, Chemistry	History, Political Economy.
Wednesday	do	Physics, Designing	Algebra.
Thursday	do	Steam Engineering, Designing	Book-keeping.
Friday	do	Chemistry, Designing	Geology, English.

Machine Shop Work and Finishing.

SCHEDULE OF DRAWING.

Drawing.—First Year.

Names and use of Instruments. Lectures.
One sheet. Letters and Figures. Copy.
Three sheets. Geometrical problems. Blackboard.
Two sheets. Working drawings for shops. Models.
Two sheets. Details of building construction. Blackboard.
Two sheets. Working drawings for shops. Models.
Two sheets. Details of Machine construction.
One sheet. Working drawings for shops. Models.
Two sheets. Beams and commercial forms of iron. Blackboard.
Sketches of tools, machines, etc., in shops.
Use of ink and colors.
All work to be discussed, calculations, etc., made, as is done in the best draughting rooms.

ELECTIVE.

Mechanical—Second Year.

Names and use of Instruments. Lectures.
One sheet. Letters and Figures. Copy.

One sheet. Working drawings for shops. Blackboard.
Three sheets. Geometrical problems. Blackboard.
One sheet. Orthographic projections. Blackboard.
One sheet. Working drawings for shops. Blackboard.
Two sheets. Working drawings for shops. Blackboard.
Two sheets. Intersection of solids. Blackboard.
Two sheets. Projection of screws. Blackboard.
One sheet. Working drawings for shops. Blackboard.
Three sheets. Pulleys and Belts. Shops and Blackboard.
Two sheets. Gear Wheels. Shops and Blackboard.
Four sheets. Details of machines.
Use of ink and colors.

All work to be discussed, calculations, etc., made, as is done in the best draughting rooms.

Architectural—Second Year.

Names and use of Instruments. Lectures.
One sheet. Letters and Figures. Copy.
One sheet. Working drawings for shops. Blackboard.
Three sheets. Geometrical problems. Blackboard.
One sheet. Working drawings for shops. Blackboard.
One sheet. Orthographic projections. Blackboard.
Two sheets. Working drawings for shops. Blackboard.
One sheet. Intersection of solids. Blackboard.
Three sheets. Structural details in wood and stone. Blackboard.
One sheet. Working drawings for shops. Blackboard.
Three sheets. Framing. Models and Blackboard.
Two sheets. Plans of building. Copy and Blackboard.
Two sheets. Elevation of buildings. Copy and Blackboard.
Use of ink and colors.

All work to be discussed, calculations, etc., made, as is done in the best draughting rooms.

Drawing.—Third Year.

Machine Designing, Architectural Designing, Draughting Room Methods, Blue Printing and Photography, applied to the Draughting Room and Shops.

SCHEDULE OF SHOP WORK.

First Year.—Carpentry, fifteen weeks; Wood Turning, five weeks; Forging, twenty weeks.

Second Year.—Pattern Making, fifteen weeks; Moulding, five weeks; Vise Work, fifteen weeks; Soldering and Brazing, five weeks.

Third Year.—Machine Shop Work, twenty weeks; Finishing, twenty weeks.

CARPENTRY.

First Year.—Fifteen Weeks.

Care and Use of Tools.

1. Half Lap, and Mortise and Tenon, 1¼ by 1¼ by 4 ins.
2. Half Lap Joint, Dovetail and Mitre, 1¼ by 1¼ by 4 ins.
3. Dovetailing.
4. A Stool, 12 by 7 by 5½ ins.
5. Frame for Door, 3 by 18 by 1 ins.
6. Scarf—Three Joints.
7. Knife Box, 14 by 7⅜ by 2⅝ ins.
8. Stairs—Carriages, risers and steps.
9. Truss—Rafters, with king and queen post.

WOOD TURNING.

First Year.—Five Weeks.

1. Care and Use of Lathe. Lectures.
2. Care and Use of Turning Tools. Lectures.
3. Cylinder between centres.
4. Cone between centres.
5. Step Cylinder between centres.
6. Inverted Cones between centres.
7. Geometrical Piece in Angles.
8. Geometrical Piece in Round.
9. Geometrical Piece Table-Leg.
10. Chuck Work.
11. Chuck Work.
12. Chuck Work.
13. Chuck Work.
14. Chuck Work.
15. Chuck Work.

COURSE IN FORGE SHOP.

First Year.—Twenty Weeks.

Forge.—Mechanism of and care of forge and smith's tools, preparation of forge for fire, building and managing the fire, heat of fire, fluxes.

Tools.—Anvil, sledge, hand hammer, square, tongs of various kinds, hot chisel, cold chisel, swages, fullers, flatters, formers, heading tools, mandrils.

Forging.—Forge square iron out of round, round out of square, octagonal out of square, hexagonal out of round, head up a rivet, head up a bolt.

Bending.—Turn a piece of flat iron to a right angle, the corners being brought square and neat, turn a flange, bend an eye, bend an ear, make a square out of a piece of flat iron.

Welding.—Make a jump weld, weld two pieces together forming a cross, make a split weld, a scarf weld, a pipe weld, bend and weld a washer of flat iron, make a round ring out of a piece of square iron, weld a square, make four or five links of a chain out of three-eighths round iron, iron to steel.

Tool Making.—Forge and finish a set of tools, a wedge, centre punch, flat nose calking tool, cape chisel, cold chisel, a drift, heading tool, callipers, straight edge, tee square, hand hammer, set of drills, set of lathe tools, make and finish a (cross pene) fitter's hammer, a (cross pene) chipping hammer, a (straight pene) chipping hammer, a (round pene) blacksmith's hammer.

Tempering.—Theory of tempering temperatures and colors, water, oil, &c. Temper chisels, turning and boring tools for wood and metals.

PATTERN MAKING.

Second Year.—Fifteen Weeks.

Care and Use of Tools. Lectures. Complete set of patterns for a Steam Engine.

1. Gib.
2. Crank.
3. Cylinder Head.
4. Connecting Rod Brasses.
5. Piston Head.
6. Piston Ring.
7. Cross head.
8. Cross Head Guide.
9. Engine Frame.
10. Cylinder.

MOULDING.

Second Year.—Five Weeks.

Care and use of Moulder's Tools: Lectures.

Crucibles, Furnaces and Cupolas: Lectures.

1–2–3. Green Sand.
4–5–6. Dry Sand.
7–8–9. Loam.

VISE WORK.

Second Year.—Fifteen Weeks.

Care and Use of Tools. Lectures.

1. Square Prism.
2. Rectangular Block with Champered Edges.
3. Octagonal Prism.
4. Rack Teeth.
5. Right Angle Piece.
6. Wrench, free hand filing.
7. Ellipse.
8. Circle and Segments.
9. Riveting.
10. Acorn free hand filing.
11. Ring.
12. Slide Rest.
13. Open Slot Piece.
14. Riveting Broken Plate.
15. Inlaid Plate.
16. Parallel Filing, Tongue and Groove.
17. Dovetail.
18. Screw, free hand filing.
19. Geometrical Form.
20. Key Way and Champer.

SOLDERING AND BRAZING.

Second Year.—Five Weeks.

1. The names and qualities of the various metals used.
2. Degrees of heat necessary for Soldering, Brazing, Tinning, Burning.
3. The proportions of metals in order to produce the best results.
4. The modes of applying heat in Soldering, Brazing, Tinning, Burning.
5. Methods of overcoming difficulties caused by overheating.
6. Method of burning metal together.
7. Preparation of metals for Soldering, Brazing, Tinning and Burning.
8. Exercises in the process of uniting the edges or surfaces of similar or dissimilar metals and alloys by partial fusion.

The course will familiarize the student with the tools of the metal worker, and prepare him for the construction of work from drawings.

THIRD YEAR.—FORTY WEEKS.

Machine Shop Work.
Names, uses and care of Hand and Machine Tools. Lectures.
Machine Shop Methods. Lectures.
Finish up Castings and Forgings of former Lessons.
Finish up a Design for Graduation.

TEXT BOOKS.

Quackenbos's Higher Arithmetic; Ray's Higher Algebra; Brooks's Geometry; Brooks's Mensuration; Brooks's Trigonometry; Gage's Elements of Physics; Peck's Ganot's Natural Philosophy; Hutchinson's Physiology; Anderson's General History; Fisher's Universal History; Quackenbos's History of the United States; Appleton's Standard Higher Geography; Handy's Atlas of the World; Westlake's English Literature; Southwick's "Studies in Literature;" Packard's Book-keeping and Correspondence; Byrne's Metal Worker's Assistant; Baker's Chemistry; Stahl and Wood's Elementary Mechanism; King's Notes on the Steam Engine; Edward's Steam Engineer's Guide; Shock's Steam Boilers; Swinton's Language Lessons; Bert's First Steps in Scientific Knowledge.

The School does not teach trades. Its aim is more comprehensive—it lays the foundation for many trades, and at the same time recognizes the value of intellectual discipline.

It is not assumed that every boy who enters this School will be a mechanic. Some will find that they have no taste for manual arts, and will turn into other paths—law, medicine or literature. Some, who develop both natural skill and strong intellectual powers, will push on through the Polytechnic School into the higher realms of professional life, as engineers or scientists.

Others will find their greatest usefulness as well as highest happiness in some branch of mechanical work into which they will readily step when they leave school. All will gain intellectually by their experience in contact with things. The general result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more skillful manufacturers, better lawyers, more skillful physicians, and more useful citizens.

SCHEDULE OF STUDIES OF THE POST-GRADUATE MECHANICAL ENGINEERING CLASS.

First half year.

Mathematics.—Algebra, Ray's Higher; Plane and Spherical Trigonometry, and Mensuration reviewed.

Chemistry.—Baker's Short Course reviewed.

Drawing.—Make a set of working drawings as directed.

English.—Describe the pattern-making, moulding, finishing, and fitting necessary to complete the work shown; New History of England; Literature.

Physics.—To page 168 inclusive, Peck's Ganot.

Second half year.

Mathematics.—Analytical Geometry, Brook's Applied Mechanics.

Drawing.—Make a set of architectural drawings as directed.

English.—Describe the processes involved in the completion of these plans; Book of Job; Shakespeare, Julius Cæsar, Hamlet, Midsummer Night's Dream, Macbeth, Rolph's Edition.

Physics.—Mechanics, Heat and Electricity, Lectures, Sound, Light, and Meteorology, Lectures, to page 310, Peck's Ganot, German.

First half of second year.

Mathematics.—Differential and Integral Calculus, Olney; Surveying.

Mechanical technology.—Shop instruction; examination of the processes and appliances involved in pattern-making, moulding, forging, and finishing, with sketches and reports.

Boilers.—Strength, construction, and wear-and-tear of boiler, Wilson.

Strength of materials.—Elasticity and strength of wood, stone, and metal, theory of beams, shafts, and columns.

English.—

Machine design.—Proportioning of such machine parts as come under the head of fastenings, bearings, rotating and sliding pieces, belt and toothed gearing, levers, and connecting rods.

Metallurgy.—Metallurgical Processes, Furnaces, Refractory Building Materials, Combustion, Natural and Artificial Fuels, Metallurgy of Iron.

Physics.—Complete the book, Peck's Ganot.

Drawing.—Calculations and working drawings for a high-speed steam-engine.

Electricity.—Magnetism, Electricity.

Second half of second year.

Kinematics of the steam-engine.—Thurston.

Mechanics of machinery.—Pumps, Pumping Engines, Compressors, Blowing Engines, and Fans.

Measurement of power.—Indicating of steam-engines, determination of evaporative efficiency of boilers, dynamometer.

Electricity.—Voltaic Electricity; management and care of a large variety of batteries; construction of electrical instruments, etc.

English.—

Preparation of thesis.

On the satisfactory completion of this course a certificate will be awarded.

FINANCIAL STATEMENT.

1884.

Appropriation		$7,000.00
Tools, furniture, drawing instruments, materials, &c	$2,236.51	
Books and stationery	490.49	
Lumber and metal for lessons	200.00	
Salaries	4,073.00	
		7,000.00

1885.

Appropriation		12,800.00
Boiler, engine, machines, tools, steam heaters, furniture, &c	6,252.52	
Books and stationery	855.13	
Lumber and metal for lessons	281.34	
Wood and coal	101.42	
Salaries	5,309.00	
		12,799.41

1886.

Appropriation		9,000.00
Machines, tools, steam heaters, gas fixtures, furniture, &c	2,721.51	
Books and stationery	602.89	
Lumber and metal for lessons	300.59	
Engine castings for senior class	130.92	
Wood and coal	204.62	
Salaries	5,012.00	
		8,972.53

1887.

Appropriation		11,000.00
Tools, furniture, drawing instruments, steam heaters, gas and water fixtures, &c	2,413.68	
Books and stationery	1,150.00	
Lumber and metal for lessons	480.00	
Engine castings and wrought iron for senior class	115.00	
Wood and coal	270.00	
Salaries	6,567.50	
		10,996.18

COST PER STUDENT.

1884.

To five per cent. of $2,236.51, cost of plant	$111.83
To twenty-five per cent. of $490.49, cost of books	122.63
To lumber and metal for lessons	200.00
To salaries of Instructors and Janitor	4,073.00
	4,507.46

Number of students on roll during the year=160, and $4,507.46 divided by 160=$28.18, the cost per student.

1885.

To five per cent. of $8,377.20, value of plant	$418.86
To twenty-five per cent. of $1,224.99, value of books	306.25
To lumber and metal for lessons	281.34
To wood and coal	101.42
To salaries of Instructors and Janitor	5,309.00
	6,416.87

Number of students on roll during the year=187, and $6,416.87 divided by 187=$34.32, the cost per student.

1886.

To five per cent. of $10,679.85, value of plant	$534.00
To twenty-five per cent. of $1,827.88, value of books	456.97
To lumber and metal for lessons	300.59
To engine castings for senior class	130.92
To wood and coal	204.62
To salaries of Instructors and Janitor	5,012.00
	6,639.10

Number of students on roll during the year=184, and $6,639.10 divided by 180=$36.08, the cost per student.

1887.

To five per cent. of $12,559.53, value of plant	$627.98
To twenty-five per cent. of $2,520.91, value of books	630.26
To lumber and metal for lessons	480.00
To engine castings and wrought iron for senior class	115.00
To wood and coal	270.00
To salaries of Instructors and Janitor	6,567.50
	8,690.74

Number of students on roll during the year=352, and $8,690.74 divided by 352=$24.69, the cost per student.

Committee of Board of School Commissioners in charge of Baltimore Manual Training School, 1888.

HON. JOHN B. WENTZ, Chairman.
JOSHUA PLASKITT, Esq. S. L. FELBER, Esq.
F. G. CONNOLLY, M. D. J. T. MORRIS, Esq.

List of Teachers and Instructors of the Baltimore Manual Training School, Session 1888–'89.

Principal—John D. Ford, Engineer Corps, U. S. Navy, Engineering and Drawing.
First Assistant—A. Newton Ebaugh, Mathematics and English.
Instructor in Wood Department—William Dugent, pattern making and moulding.
Instructor in Metal Department—C. F. Friese, Machine Shop and Finishing.
Instructor in Academic Department—William H. Hall, Chemistry and Physics.
Instructor in Academic Department—A. J. Peitsch, English, Physics and Physiology.
Instructor in Academic Department—J. C. McSherry, English and History.
Instructor in Metal Department—William G. Richardson, Forge and Sheet Metal Work.
Instructor in Wood Department—Richard Piez, Carpentry and Wood Turning.
Fireman—C. J. Bowen.

THE TOLEDO MANUAL TRAINING SCHOOL, TOLEDO, OHIO.

Among the many interesting papers read and addresses delivered before the annual meeting of the Department of Superintendence held in Washington, D. C., March 15–'17, 1887, the paper read by Superintendent H. W. Compton, of Toledo, describing the result of the experiment in that city in Manual Training, attracted marked attention. The topic was evidently regarded by the audience as a live subject, and the reading of this paper led to a very spirited discussion.

Before proceeding to a detailed historical account of the school and its courses of study, a summary of the paper then read, as it is given in the School Journal for April 9, 1887, is inserted, as giving in brief the general results of the experiment, with the Superintendent's favorable conclusions.

Letters received from Superintendent Compton state that "the value of the manual endowment is estimated at $100,000. The school is supported by a levy on the Tax Duplicate of three-fourths of a mill, which furnishes $9,000. The actual running expenses of the school for the year are $6,000."

He also states that Mr. Ralph H. Miller, a graduate of the St. Louis Manual Training School in the class of 1884, was called to Toledo as the first principal of the Manual Training School.

MANUAL TRAINING IN TOLEDO.*

By H. W. COMPTON,

Director of Manual Training School, Toledo, Ohio.

Manual training in the Toledo high and grammar schools grew from a humble beginning, in a small room with sixty boys and girls engaged in wood-work and drawing, to its present prosperous condition in a new, four-story building 60 by 120 feet, splendidly equipped with steam-power, tools, benches, lathes, forges and ample drawing-rooms, and a domestic economy department, with all the necessary apparatus for studying the nature and preparation of foods for the table.

The students have increased to about one hundred and seventy-five in all departments, and have manifested the greatest interest and enthusiasm for the work from the beginning. This intense interest in the new work has had to be so modified and regulated as not to interfere with the successful prosecution of the intellectual or class-room work proper. After some experimenting the two lines of work were harmoniously adjusted to each other. Boys and girls pass from their algebra and history to their drawing and wood-work, and from these again to their geometry and English literature, with a hearty zest for all. The girls in the domestic economy department con their Virgils or don their cooking suits and prepare with ease and grace such savory and palatable food as would convert the most radical opponent of industrial training. In short, there is such an harmonious blending of the useful and the practical with the higher intellectual culture, that the unprejudiced observer needs but to see it to be convinced of the reasonableness and great utility of such training.

THE CAUSE OF OPPOSITION TO MANUAL TRAINING.

The opposition to manual training rises largely from lamentable ignorance which prevails concerning its aims and results. Many seem to think that the sole object of industrial training is to make mechanics and train them to mere manual dexterity. This is an utterly erroneous idea. The manual work is to furnish the pupils an opportunity to study at the bench, forge, lathe, and engine the nature of matter and the manifestations of force. It is purely educational in its object. It first teaches him to portray in the drawing a variety of beautiful and useful forms, and then how to embody these forms in wood and metals. It teaches how to express thought, not in words alone, but in things. It produces nothing for the market except well-trained minds and skilful hands.

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* Remarks made before the meeting of the Superintendents at Washington, held March 15-17, 1887, as reported in The School Journal (New York and Chicago), April 9, 1887.

DIFFERENCES BETWEEN THE SCHOOL AND THE FACTORY.

In the factory the individual is nothing; the article he makes is everything. In the training school the articles made are of no moment; the boys and girls are all-important. They make many useful and beautiful things, but these are of no value compared with the useful knowledge gained, the symmetrical mental development acquired. Some of the advantages that are apparent from this course of study are: that the industrial work holds many pupils in the higher grades, and thus gives them the benefits of a complete education; it conduces to their moral welfare, in that it employs all their time in a pleasant and healthful way, thus preventing idleness and crowding out impure thoughts and conceptions that might find a harbor in the young mind; it dignifies and exalts labor, and teaches respect for the laboring man; it teaches no special trade, and yet lays the foundation for any trade, and gives the youth such knowledge and skill that he becomes a better and sounder judge of men and things, in whatever business or profession he may engage.

Manual training is a successful and satisfactory branch of study in the Toledo schools, not because it is theoretically a good thing, but because it is well-managed, has good instructors, and proves itself of great value to the pupils.

THE TOLEDO SCHOOL HAD ITS ORIGIN IN PRIVATE LIBERALITY.

It will be observed that nothing is said in these remarks by Mr. Compton of the fact that the city of Toledo primarily owed its school to the liberality of a private citizen. He undoubtedly assumed that all his auditors were familiar with the well-known facts which are set forth at length in the catalogues of the school.

In 1872 Mr. Jesup W. Scott, of Toledo, who had conceived the plan of founding a High Class Technological Institution, conveyed to "The Toledo University of Arts and Trades," which had been incorporated for this purpose in accordance with his wishes, valuable real estate. Subsequently the conditions of the trust he had created were so modified as to allow the Trustees to act in connection with the public educational authorities. In accordance with this modification the city school authorities have been enabled to obtain most unusual and valuable facilities for trying the experiment of Manual Training under the most favorable conditions, and with no other cost to the citizens than the annual running expenses of the school.

THE INAUGURAL ADDRESS.

Upon the opening of the school, October 7, 1884, Colonel Augustus Jacobson, of Chicago, Illinois, delivered a very interesting address on the subject of "Manual Training Schools,"* in which he illustrated in many ways the value of mechanical skill in its application to every form of industry and emphasized the crying need now existing in this country for a larger class of men possessing such thorough technical training as would qualify them for employment as skilled workmen in all kinds of productive industries; mastery of the details of a special industry being very readily acquired by one so trained. This address was published by the Toledo School.

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* Manual Training Schools.—An address by Col. Augustus Jacobson, of Chicago, Ill., delivered in Toledo, Ohio, October 7, 1884, upon the occasion of opening the Manual Training department of the Toledo High School. B. F. Wade Co., Printers, & Binders. 1885. Pp. 24.

In order to facilitate the speedy establishing of Manual Training Schools in which such skill could be acquired, in the cities and towns throughout the country, which otherwise must needs be greatly retarded by the heavy expenditure required, due to the cost of the plant; and, further, with the purpose of enabling the children of the poorest citizens to profit by these opportunities, Colonel Jacobson, having in view the causes that compel the very children who most need public instruction to be soonest deprived of it, conceived a plan which should make it so clearly for the interest of the poor parents to continue the attendance of their children, that the difficulty of rapidly diminishing attendance in the higher grades, now so evident, would disappear.

AN ORIGINAL SUGGESTION.

To effect his double purpose Colonel Jacobson has brought forward a very original proposition, which resembles in its main feature the English plan of "money payments;" only, in this American modification of that feature so opposed to all our customs, the proposal is: to pay the scholar, for attendance; not the teacher, for teaching. In England, by the "Grant in Aid" system, a bounty is offered for every pupil who passes at stated intervals the required examinations; this sum being an addition made to the small fixed salary secured to the teacher, the theory being that the teacher is thus incited to better work—the result often being, it is asserted, that the true interests of the pupil are very generally sacrificed to the desire of the teacher to gain the payments. This plan of offering to the pupils themselves extraneous inducements for school attendance, which sometimes takes the form of a free meal, sometimes of a trifling money present, or of a summer picnic excursion, or a Christmas tree with its gifts, is not wholly unknown in America to charitable "ragged schools," in poor districts of towns and cities, and to Sunday Schools of all classes and denominations, and is a well-recognized means of sugar coating, as it were, the pill of knowledge for ignorant patients. It is the colossal scale upon which this device is now projected which makes it so noticeable. It is, in effect, compulsory education applied to Industrial Training; but, this time, instead of trusting to the stick, the bunch of luscious grass is to be relied on as the all-compelling attraction.

It is a startling proposition, for it proposes in the first place nothing less than governmental establishment of a Manual Training Department in every Public High School in the country, and in the second a scheme of progressively increasing money payments to each high school pupil for four years! Colonel Jacobson finds the immense sum requisite for all this, ready at hand, in the receipts arising from the internal revenue tax on whiskey and tobacco. This sum has been readily collected, will soon, he forsees, no longer be needed, owing to the rapid reduction of the National Debt, and can be readily applied as he suggests without imposing any additional burden on the public.

He proposes to utilize it to establish the universal Industrial Education of American school children. He would effect this by putting Manual Training in the high school and by distribution of money among the scholars in annual payments for four years to each pupil; to begin with $50 for the first year, $100 for the second, $150 for the third, and $200 for the fourth. This would lead the parents of most of the children to desire them to reach and go through the high schools, and, as the majority of them would be from families who get the least schooling, the great educational problem of how to persuade these children to remain at school long enough to get the benefit that the public which supports the schools has a right to expect would be happily solved. He argued that this is feasible; that it has been shown that the whiskey interest can pay this tax without hardship, and so return to the community some good for the terrible evils it inflicts; while, unless this is done, that tax will surely be repealed, as the National Debt will all be paid off within the next fifteen years. He supports this plan by many ingenious, strong and eloquent arguments.

The bed rock of all his structure being the American idea of giving to every child an opportunity for the best development of all his powers. Where other nations spend for armies he would have America spend for schools. "It would make life easier for the struggling multitude. * * * Instead of being a burden for a poor man to educate his children, the money that he then would draw for their education from the public fund would lighten his load. * * * It would be cheaper for him to educate his children than to leave them in ignorance. The poorer the man the more anxious would he be to educate his children, and the more certain would he be to do it. * * * It would settle the child labor question."

He refers, in proof that educated industry enriches not impoverishes a country, to the contrast between this country when in possession of the Indians and now.

To the supposed objection that such a plan is new he retorts: "Since when have we in this country begun to object to things because they are new? Every thing in America is new. To govern by keeping men down is old. To govern by raising men up is new."

His picture of a land where all the children of the poor, now forced to toil for a pittance and remain in hopeless ignorance, would have the opportunity of developing and training all their mental and physical powers, is certainly as attractive as poets' fairest dream. "More than ever before it would make of this land for struggling humanity an earthly paradise." He closes thus:

THE AMERICAN IDEAL.

From Jamestown and Plymouth Rock down to the present moment the loftiest American thought is that in this country there shall be at the very earliest possible moment, free of charge for every child on the soil, the highest and best and most practical training the child can take and the world can give. The dream of commerce and industry is a land full of good customers. The dream of patrotism is a land full of free, intelligent and independent citizens. The dream of poesy is a land full of smiling, loving, happy homes. The dream of commerce and industry, the dream of patriotism and the dream of poesy are all the same dream.

It was a notable address on an occasion of great interest. Possibly those who have for so many years been endeavoring to induce Congress to pass a National Aid to Education Bill would suggest to the eloquent advocate that Legislatures and Congresses are, as yet, hardly educated up to the point of crystallizing such ideals into statutes; not even though he brings to bear upon them such high authorities as are Franklin, Jefferson, and Washington from whose writings he quotes most effectively.

WHAT THE UNITED STATES HAS DONE FOR EDUCATION.

Yet in a country in which the General Government has ever made most generous provision for education, securing certain allotments of public lands to the States for the education of the people; which created, by enactment, Schools of Agriculture and the Mechanic Arts in all the States; and which has, for many years, given a free home of 160 acres of land to every settler who honestly applied for it; such a proposition of devoting the product of certain taxes to education ought not to be so very startling. To the *Laissez faire* people of course every proposition that the General Government should itself do anything in such directions is regarded with equal disapproval; and to many political economists the idea of thus bribing people to take education would be abhorrent.

These people all seem to prefer to build ever larger prisons, to multiply almshouses, and to continue to breed the idle hoodlums who will eventually occupy these lazar homes, and who furnish the nidus for nihilism and anarchy, rather than to violate their theories by expending a dollar out of the public treasury of the States or of the Nation to prevent these evils.

It may be that the particular plan brought forward by the orator is impracticable; it may be that the industrial education he would thus promote would not prove so effectual a means of social salvation as he believes; yet, to have devised a scheme whereby part of the money which the whiskey consumers pay out for whiskey should be applied for the building up and benefit of the community, seems not wholly devoid of practical sagacity, for it is not a characteristic of that class to save up their money to be applied by themselves to domestic needs, and, since the Government has found a way to get hold of some sixty odd millions of their money annually, for the general uses of the community, what better use could be made of it, when no longer needed for other public use, than to apply it to the education of their children in such a way as to train them up to be skilled, industrial producers. As all the pages of this Report relate, directly or indirectly, to this question of how best to train, in the best industries, the school children of America, the consideration of this proposition of Colonel Jacobson is germane to our subject.

That elementary training in industrial art should be given to the school children of the people, seems to be a growing conviction, and when that is once generally admitted as a public duty, only the question of how much or how little of this training shall be given, will remain. The orator suggests a plan by which much more than has been generally thought possible can, in his judgment, be secured.

The following communication from Elder Evans, the well-known representative of the prosperous communities of Shakers in the United States, which appeared in the New York Tribune of March 12, 1887, is of interest in this connection, as it gives direct testimony to the good results of specific industrial training, as carried on for nearly a century; it also indicates that the Tribune had put forward a plan of governmental aid to industrial education, somewhat similar to that so eloquently advocated by Colonel Jacobson. It is inserted here for its positive evidence as to the worth of industrial education:

ELDER EVANS ON EDUCATION.

To the Editor of The Tribune:

SIR: Is not education one of the inalienable rights of human beings? If society allows children to be born, is it not the duty of society to make existence a blessing? Good parentage, good care, food, clothing, lodging, and good schooling—education—that shall develop all the self-supporting faculties of body and mind. When will society become rational, act rationally, in relation to the continuance of the race? * * *

There are some sixty Shaker families who have been taking in and educating children from the world's people, for about one hundred years. Thousands of these children have gone out from among them when they became of adult age. But few of these ever became paupers or criminals; being educated in a community, they learn how to do a great variety of things. The boys learn to manage cows, sheep, horses, poultry; how to work on the farm, garden, orchard; and how to turn their hands to almost every kind of mechanical work, such as carpentering, blacksmithing, shoemaking, etc. And the girls learn everything useful, including housekeeping, cooking, mending and making clothes, etc. In a family of sixty people almost everything can be done by the members, who have been brought up and educated in the family; from raising and cooking the food to plumbing the buildings. Why should not public industrial schools be self-supporting communities, like Shaker societies? War, pauperism and crime would soon be matters of history, with slavery and the Inquisition.

The suggestion of The Tribune to use the accumulating funds of the Government to feed, clothe, house, and educate the children of the country in industrial schools is just what is needed; not more soldiers, more pensions, more Monitors, forts, and guns of large calibre. Let us have peace by putting away the causes that create wars and fightings.

F. W. EVANS.

MT. LEBANON, *March* 4, 1887.

HISTORY OF THE ORIGIN AND DEVELOPMENT OF THE TOLEDO MANUAL TRAINING SCHOOL.

The institution founded by Mr. Scott was incorporated as The Toledo University of Arts and Trades. Subsequently, as will appear later, it was merged into the Toledo University. The Toledo Manual Training School was then established to be maintained under the joint control of the Toledo Board of Education and of the Directors of the Toledo University. Two Annual Reports, bearing respectively the dates of 1885 and 1887, have been issued.* From the historical data contained in these, the following statement is taken. Besides these historical pages, the pamphlets contain the separate Reports of the Directors of the University and of the Directors of The Manual Training School, from which the account here given is compiled.

HISTORICAL.

October 21, 1872, Jesup W. Scott and Susan Scott, his wife, conveyed to the Toledo University of Arts and Trades, an incorporation created for that purpose, 160 acres of land in Adams Township, adjacent to the city line, and "estimated in value at $80,000, in trust for the promotion of education in the arts and trades and related sciences, in addition to what is furnished by the public schools of the city."

Mr. Scott was himself one of the incorporators of the University of Arts and Trades, The designated Trustees of such institution were William H. Scott, Frank J. Scott, Maurice A. Scott, Richard Mott, Sarah R. L. Williams, William H. Raymond, Albert E. Macomber, Charles W. Hill, and, also, *ex-officio*, the Mayor and Superintendent of Public Schools in Toledo, and the Governor of the State of Ohio. Richard Mott was subsequently elected President of the Board of Trustees.

In 1873 the University Fund was increased in the sum of $15,000 by a gift from William H. Raymond.

By a subsequent amendatory deed to said Toledo University of Art and Trades, Jesup W. Scott and wife released the Trustees from some of the conditions imposed in the first deed, so that the trust fund might be used to advance education in the arts and trades in connection with any municipal or State fund or system of public education. This change was made at the earnest solicitation of his son,

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*First Annual Report of the Directors of the Toledo University of the City of Toledo, for the year ending December 31, 1885. Toledo, Ohio: The B. F. Wade Co., Printers. 1885. Pp. 24. Second Annual Report, ditto, for the year ending January 1, 1887. Pp. 43.

Frank J. Scott, who had long been impressed with the importance of grounding all educational work on the broad basis of the free public school system.

In 1868, Mr. F. J. Scott published in the *Radical Review*, of Boston, an original and suggestive essay entitled "The Future Palaces of America," in which the possibilities of the free public educational system of the United States, if carried to its legitimate extent, were eloquently presented. The necessity of securing practical education in the arts and trades upon the same basis already adopted by the States for primary and classical education, was thus fortunately recognized by Mr. J. W. Scott in time to execute the amendatory deed just before his death.

After the death of Jesup W. Scott, which occurred January 22, 1874, his widow, Susan W. Scott, and his three sons carried out his known wish to have the University further endowed by the joint conveyance to the Trustees of the University of real property in the City of Toledo, estimated in value at $50,000.

April 1, 1873, with funds given by William H. Raymond, the Trustees of the said University of Arts and Trades purchased the property known as Raymond Hall, corner of Adams and Tenth streets, for the purpose of beginning the work of such institution. The property was purchased at public sale, and the situation was deemed a desirable one. The gift from Mr. Raymond amounted to $15,000.

January 14, 1875, the Trustees of the University of Arts and Trades arranged to open the School of Design in Raymond Hall two hours during five evenings of each week, also on each Saturday, and William Young was employed as instructor. May 1, 1875, Mr. Young was called away from Toledo, and Mr. C. J. Shipley was employed in his place. Subsequently Mr. E. O. Fallis took charge of the school. This School of Design continued for several seasons and imparted valuable instruction to large classes of pupils.

July 5, 1875, Mr. Frank J. Scott procured for the School of Design a very valuable collection of studies in Architecture and Mechanical Arts, consisting of books, photographs, engravings and lithographic prints in great variety.

January 18, 1884, the Trustees of the Toledo University of Arts and Trades, being unable, with the resources in hand, to realize the purpose of the donors, made a tender of the entire University property to the City of Toledo, on condition that the city would assume the trust under and by virtue of the powers conferred in sections 4095 to 4105, inclusive, of the Revised Statutes of Ohio.

This property was formally presented to the Common Council, and, after full consideration by the Committee on Education and University, was accepted by resolution adopted February 7, 1884. Subsequently this acceptance was duly embodied in an ordinance under which the Common Council established the Toledo University, as heretofore more fully stated.

On the 18th of March, 1884, the Common Council approved an ordinance establishing the Toledo University. A portion of this ordinance as subsequently re-approved in the Revised Ordinances of the city reads as follows:

"SECTION 678. There is hereby established a University for the promotion of free education of the youth of both sexes within the city, under and by virtue of Chapter 14, Title III, Revised Statutes of Ohio, to be styled and known as the Toledo University.

"SEC. 682. The Directors of the Toledo University are authorized, in the name and behalf of the city, to accept and take, as trustee in trust, for the purpose of founding, maintaining, or aiding said University, or any department thereof, a conveyance and transfer of any estate, property or funds which have been heretofore, or hereafter may be, lawfully given and transferred to the city for such purpose, upon such terms, conditions and trusts, not inconsistent with law, as the Common Council, by ordinance, may deem expedient and proper for that end; or any annuity or endowment in the nature of income, which may be covenanted or pledged to the city toward such purpose; and such estate, property or funds, when so conveyed, assigned, or transferred and delivered, shall be held and applied by the city in trust, for the uses and purposes for which they may be conveyed, assigned, or transferred, and the custody, management and entire administration and control thereof shall be entrusted to the Directors of the Toledo University, for such purpose, in accordance with the terms, and true intent of the trust and conditions upon which the same may be given or held.

"SEC. 683. The first department of such University to be opened shall be designed and known as the Manual Training School, and shall be devoted to instruction in the practical arts and trades."

On the 25th of May, 1884, the Directors of the Toledo University were duly appointed and confirmed by the Common Council.

July 3, 1884, the Trustees of the Toledo University of Arts and Trades, by Hon. Richard Mott, their president, conveyed the real estate held by that corporation, and estimated to be worth $100,000, to the City of Toledo in trust for the promotion of practical education, under the direction of the University Board.

October 1, 1884, the work of the Manual Training Department began in rooms in the High School Building, assigned by the Board of Education, with Mr. Ralph H. Miller, a graduate of the Saint Louis Manual Training School, as instructor, and a class of sixty pupils.

The formal opening of the Manual Training School in the new building was duly commemorated by an important educational convention held on the 4th and 5th of December, 1885.

In arranging the laboratory work for boys, the methods of the Saint Louis Manual Training School under Dr. C. M. Woodward have been closely followed, while the Department of Domestic Economy has been mainly indebted to Mrs. Emma P. Ewing, Dean of the School of Domestic Economy, of Iowa State College at Ames, Iowa.

The following copious extracts from the two annual Reports of the Directors of the University give, in detail, the transactions of the Board. In the first Annual Report the sections of the City Ordinances creating the Board, etc., are quoted; as those essential to this history have been already given in the historical data they are here omitted:

FIRST ANNUAL REPORT OF THE DIRECTORS OF THE TOLEDO UNIVERSITY.

To Hon. Samuel F. Forbes, Mayor, and the Hon. Common Council of the City of Toledo:

GENTLEMEN: On the 18th of March, 1884, the Common Council approved the ordinance under which this Board was organized. * * *

The above ordinance was enacted under the authority of Sections 4095 to 4105 of the Revised Statutes of the State of Ohio. This act provides that the number of Directors of said University shall be thirteen; six of whom shall be nominated by the Board of Education of the city, and six shall be nominated by the Mayor, all to be confirmed by the Common Council, and the Mayor of the city shall be *ex-officio* a member of said Board of Directors.

THE FIRST BOARD OF DIRECTORS.

On the 25th of May, 1884, at a joint session of the Common Council, the following persons were duly confirmed as Directors of the Toledo University, namely:

Upon the nomination of the Board of Education: Horace S. Walbridge, for a term of one year; Hon. Henry Kahlo, for a term of two years; Frank J. Scott, for a term of three years; William H. Scott, for a term of four years; M. D. Carrington, for a term of five years; A. E. Macomber, for a term of six years.

Upon the nomination of the Mayor: Maurice A. Scott, for a term of one year; Noah H. House, for a term of two years; Dr. Samuel F. Forbes, for a term of three years; Bernhard Meilink, for a term of four years; William G. Haggenberg, for a term of five years: Hon. Guido Marx, for a term of six years; Hon. Jacob Romeis, Mayor, *ex-officio* member.

May 29, 1884, said directors met and organized, with William H. Scott, president; Dr. Samuel F. Forbes, vice-president, and A. E. Macomber, clerk. On the 3d day of July, 1884, the Trustees of the Toledo University of Arts and Trades, by Hon. Richard Mott, its president, conveyed the real estate held by that corporation, and estimated to be worth $100,000, to the City of Toledo in trust, for the promotion of practical education, under the direction of this Board.

Then follow details of the lots and parcels of the real estate thus transferred.

THE MANUAL TRAINING SCHOOL.

* * * By the terms of the above ordinance your Directors were instructed to first establish the Manual Training School department of the Toledo University.

Frequent conferences with members of your honorable body gave assurance of the united conviction that the best results could be obtained by establishing this department in connection with the High and Grammar Schools of the city, and that the trust estate, with the generous assistance from the city, should be ample to establish and maintain this department in a high degree of efficiency.

The Board of Education gave warm assurance of a desire to heartily co-operate in the establishment of this department in connection with the public schools, and in September, 1884, assigned for this purpose two commodious rooms in the High School building. One of these was used as a drawing room and the other duly equipped with work-benches, tools, etc., and a very competent instructor. Mr. Ralph H. Miller, a graduate of the Saint Louis Manual Training School, was employed. Fifty boys and ten girls from the High and Grammar Schools immediately entered upon the work of this department.

In March, 1885, the Board of Education, as further earnest of its desire to promote manual instruction, executed a lease to the University Board of the site upon which the Manual Training School building has been erected. This lease was executed under authority of the State Legislature, obtained for that purpose, and runs for a term of twenty years, subject to indefinite renewal unless after that term the exigencies of the High School shall need the room; in which event, the appraised value of the building shall be paid by the Board of Education to the University Board. This condition was undoubtedly a wise precaution on the part of the Board of Education, but it is nevertheless the view of both parties to the lease that such exigencies will never arise, and that the lease is practically a perpetual one. It is believed that under wise direction the two systems of instruction will become so welded together as to be forever inseparable.

THE BUILDING.

This Board immediately entered upon the work of constructing a building upon the site so generously furnished by the Board of Education ample to meet the demands of a fully-equipped school. Careful consideration was given to the arrangement of rooms adapted to the work of the school. Plans were furnished by Messrs. E. O. Fallis & Co. The contract for brick work, stone work, catch basin, plastering of office room, etc., was let to Messrs. Hanehan Bros., and the contract for wood work was let to Anderton Bently. The building was practically completed and formally opened December 5, 1885.

The building has been equipped with a 50-horse-power engine from the factory of the Ball Engine Company of Erie, Pennsylvania. The boiler was made by Messrs. Brownell of Dayton, Ohio. The building is heated with the exhaust steam from the engine. The steam piping and plumbing work was done by Messrs. Locke & Schultz, of this city. Two wood working rooms are fully equipped with work benches and tools, including twenty-four turning lathes of the most approved pattern, designed by Mr. S. N. Goodwin and manufactured by Messrs. Shaw, Kendall & Co., of this city. The iron working rooms are being fully equipped, and will be in readiness for the school year beginning September 1, 1886.

The Manual Training School is now in full operation, with eighty boys and forty girls in attendance. The instructors are Ralph H. Miller, principal and instructor in shop work; George S. Mills, instructor in drawing; N. W. House, instructor in shop work, with George S. Waite, assistant.

THE NEW BUILDING OPENED WITH AN EDUCATIONAL CONVENTION.

The formal opening of the Manual Training School in the new building was duly commemorated by an important educational convention, held on the 4th and 5th of December, 1885. This convention was an occasion of much interest to the educational circles of the West. Many prominent speakers of a national reputation were present and delivered addresses in explanation and commendation of the plan to be carried out. This number included ex-President Hayes, who presided; Dr. C. M. Woodward, managing director of the Saint Louis Manual Training School; Professor Felix Adler, managing director of the Workingman's School, of New York City; Mrs. Emma P. Ewing, dean of the School of Domestic Economy in the Iowa Agricultural College; Colonel Augustus Jacobson and Hon. Charles H. Ham, of Chicago, and Dr. Henry H. Belfield, director of the Chicago Manual Training School. Some of the principal topics of discussion were: Manual Training and its Relation to Public Education; the Educational Advantage of Drawing in the Public Schools; Industrial Training for Girls; Domestic Economy; Industrial Art, etc.

In the task of establishing the Manual Training School your Directors have not felt at liberty to enter into any new or untried experiments, concerning the issue of which there might be a doubt. They have endeavored to acquaint themselves with the methods of the most successful schools already established, and are well assured that they are working upon a system that has yet to make its first failure.

To Dr. C. M. Woodward, of the Saint Louis Manual Training School, and Mrs. Emma P. Ewing, dean of the School of Domestic Economy, the Directors are deeply indebted for much valuable aid in the organization of this school. The Directors are also deeply grateful to Colonel Augustus Jacobson, Professor Felix Adler, Dr. H. A. Belfield, Hon. Charles H. Ham and ex-President Hayes, for the valuable assistance the school has received at their hands. The hearty co-operation of Professor J. W. Dowd, superintendent of Public Schools in Toledo, and the teachers of the High and Grammar Schools, has been invaluable in the successful establishment of the Manual Training School.

September 1, 1885, Mr. Noah W. House retired from this board in order to accept a position as instructor in the Manual Training School, where he has rendered most valuable services.

The board has recognized that the pupils of the parochial schools are entitled to the opportunities of the Manual Training School, and arrangements have been made for the admission of such pupils, who have reached the equivalent of senior grammar school grade, and at such convenient hours as to enable them to pursue their mental studies in their respective parochial schools.

Mr. Bernard Meilink, on account of pressure of other duties and ill health, was unable to serve as a member of the board.

THE COST OF THE NEW BUILDING.

The amount expended upon the Manual Training School building, including the underground boiler and coal rooms placed outside of the main building, sewer connections, grading, walks, steam piping, etc., has been $22,951.44.

On the 16th of November, 1885, the Common Council issued $20,000 University bonds, running for a term of ten years at 5 per cent. interest. These brought a premium of $872.14, making a total yield of $20,872.14.

These bonds were issued in anticipation of the sale of so much of the tract of 160 acres held in trust as shall be required to meet this issue. The sale of real estate from the trust estate amounts to $12,180, as heretofore stated.

The receipts and expenditures in the construction of the building and maintenance of the school, to January 1, 1886, have been as follows:

RECEIPTS.

Real estate, proceeds issue of $20,000 5 per cent. ten-year bonds			$20,872.14
Real estate, proceeds of real estate sold	$12,180.00		
Real estate, proceeds of rents	402.00		
		$12,582.00	
Less mortgage incumbrances	7,934.36		
Less taxes, assessments and insurance	901.36		
		8,835.72	
			3,746.28
Material used in shop collected from pupils			213.30
General levy city duplicate for 1884			5,920.30
Accounts payable			1,567.18
Total			32,319.24

EXPENDITURES.

Manual Training School building	22,951.44
Tools and machinery	5,627.35
Current expenses from September 1, 1884, to January 1, 1886, including salaries of instructors	3,465.90
Material for shop	213.30
Balance unexpended with County Treasurer	61.25
Total	32,319.24

By the terms of the trust deed, and the requirements of the law under which this school is organized, tuition is free to all residents of the City of Toledo at the time of admission. A fee, corresponding to the charge made in other schools of like grade, has been named for pupils from abroad who may desire to avail themselves of the advantages of the school. The course of instruction adopted for the pupils of the Manual Training School is presented herewith. This course will be subject to whatever changes experience may suggest. A competent teacher in the department of Domestic Economy will enter upon her duties September 1, 1886.

WM. H. SCOTT, *President.*
A. E. MACOMBER, *Secretary.*

The second Annual Report, for the year 1886, is given in full:

SECOND ANNUAL REPORT OF THE DIRECTORS OF THE TOLEDO UNIVERSITY.

To the Hon. Samuel F. Forbes, Mayor, and the Hon. Common Council of the City of Toledo:

GENTLEMEN: In their first annual report, presented one year ago, your Directors were enabled to announce the erection of a suitable building for the Manual Training School Department and the equipment of several rooms with adequate tools and machinery for instruction in wood-working. Two commodious and well-lighted rooms had also been provided for instruction in free-hand, mechanical and architectural drawing.

During the summer of 1886 the forging shop was duly equipped with the most approved appliances for practical instruction in metal working, such as forging, welding, tempering, brazing and soldering, and classes entered upon such work in the Autumn term of the current year.

The room set apart for iron machine work will be equipped during the summer of 1887. This being done the Manual Training School will be furnished with tools and machinery for instruction in wood and iron work to the extent now contemplated.

PROVISION FOR THE GIRLS.

Since the last report the Department of Domestic Economy has received the earnest attention of your Directors.

It became apparent that not only abstract justice but an enlightened public sentiment demanded that the opportunities for industrial instruction for girls should be as ample and complete as that contemplated for boys.

While the work of this department was not wholly without precedent, yet your Directors deemed it wise to call to their aid an Advisory Council of ladies to assist in maturing the general plan and details of such instruction, and the advice and direction of such council has been of value in the organization of this department.

Two large and well-lighted rooms on the upper floor of the new building have been set apart for this work, one of which has been furnished with all needed appliances for practical instruction in cookery.

A skillful teacher, Miss N. E. Rawson, a pupil of Mrs. Ewing of the Iowa State College, has been secured, and instruction in cookery is now furnished to large and enthusiastic classes.

The Department of Domestic Eeconomy has been received with great favor and support and promises to meet the full expectations of those who most warmly encouraged its establishment. The instruction in cookery has proved of great practical value. Next school year instruction will be furnished in cutting and garment making.

EVENING DRAWING CLASSES.

Your Directors understand that it is the earnest desire of the Mayor and Common Council that the advantages of this school shall be placed within the reach of all the youth of the city so far as they shall evince a desire to avail themselves of such opportunity. In view of the great advantage that will accrue to a large number of young mechanics and others who have employment during the day, from instruction in free-hand, mechanical and architectural drawing, it has been determined to furnish such instruction in evening classes during a portion of the year, and to this end classes were organized last November.

The Board of Education have from the outset evinced the warmest sympathy with this movement and have in every possible way extended their aid and co-operation. The very satisfactory progress already made in the growth of the Manual Training School has been in a large measure the result of such aid and co-operation. To round out and make more complete the course of instruction furnished by the Evening School, the Board of Education has maintained instruction in arithmetic, geometry, grammar, etc.

Through the joint action of the Board of Education and the University Board, it may confidently be expected that evening classes will hereafter be maintained each year for a period of not less than six months.

Instruction will be furnished in all the branches and departments of the day schools so far as a demand shall be made to appear. Thus far the evening classes have devoted themselves mainly to drawing and mathematics.

From the property held in trust for the promotion of the Manual Training School, there has been sold during the past year the lot and building on the corner of Adams and Tenth streets, known as the church property, to the Central Congregational Society for the sum of $8,000. The proceeds of such sale have been applied to the further equipment and completion of the Manual Training School building.

The receipts and expenditures of this Board for the year ending January 1, 1887, have been as follows:

RECEIPTS FOR 1886.

Real estate:	
Proceeds of real estate sold	$8,000.00
Proceeds of rent	281.00
	8,281.00
Less tax and sidewalk improvement	95.84
	8,185.16
Material used in shop—collected from pupils	634.57
General levy city duplicate for 1886	6,266.42
Accounts payable	66.824
	15,552.97

EXPENDITURES FOR 1886.

Manual Training School building	2,986.97
Tools and machinery	5,677.89
Current expenses:	
Including salaries of instructors	5,148.49
Materials for shop	634.57
Interest account	968.20
County Treasurer—Balance unexpended in excess of 1885	136.85
	15,552.97

ATTENDANCE.

The attendance upon the Manual Training School is optional, yet the day classes now number 150; and the evening classes 50; and in addition a number of post graduates of the High School are availing themselves of the instruction furnished in the Department of Domestic Economy.

The interest in the work of this school continues to increase, and it is believed that each year the classes will increase in numbers.

INTEREST SHOWN BY OTHER COMMUNITIES.

Other communities have been watching the example of Toledo with great interest. The letters of inquiry and personal visits from all sections of the country indicate the widespread interest in the Manual Training School movement. This is further evidenced by the attention which this topic has received in the leading magazines and newspapers during the past year. Many of our most conservative thinkers regard this practical instruction furnished to all the children of the State and within the reach of all, as one of the most promising factors in the solution of social problems.

Since our last report Manual Training Schools have been established in Cleveland and Cincinnati and a movement is now on foot to incorporate the Cleveland Manual Training School into the public school system, legislative authority having been obtained this winter for that purpose.

It is stated upon reliable authority that if every High School in the United States possessed a fully equipped Manual Training Department with adequate instruction for two hundred and fifty pupils each, yet even then this country would fall below Germany in the attention given to this line of instruction.

The city of Toledo is to be congratulated in having been among the earliest to enter upon this important work, and perhaps is absolutely the pioneer city in bringing manual training under the wing of the free common school system.

WM. H. SCOTT,
President of the Board of Directors.
A. E. MACOMBER,
Secretary.

ORGANIZATION AND METHODS OF THE SCHOOL.

The history of the origin and development of this important educational undertaking having already been given at length, the account of the school and the details of its courses of instruction as contained in the report for the year 1886 will now be given. The differences between the courses of study as given in the two reports are slight—what was called "Laboratory" work, in the first report, is now called "Shop" work. In the first report credit is given to Professor Woodward, of Saint Louis, for the arrangement of the course in Manual Training, and to Miss Emma P. Ewing, Dean of the School of Domestic Economy in Iowa State College, for the arrangement of the course in Domestic Economy.

In the list of the City Board of Education the name of Dr. S. H. Bergen, who was a member in 1885, gives place to that of H. D. Pierce in 1886. In the list of Directors of the University the name of H. S. Walbridge, in 1885, gives place to that of Theodore J. Brown in 1886; otherwise the membership of these two bodies remains the same.

THE TOLEDO MANUAL TRAINING SCHOOL (MAINTAINED UNDER THE JOINT CONTROL OF THE TOLEDO BOARD OF EDUCATION AND THE DIRECTORS OF THE TOLEDO UNIVERSITY).

TOLEDO BOARD OF EDUCATION.

JOHN C. RIKE, President;
CHARLES ZIRWAS,
Dr. JOAB SQUIRE,
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DIRECTORS OF TOLEDO UNIVERSITY.

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THEODORE J. BROWN,
DANIEL C. SHAW,
Dr. SAMUEL F. FORBES, Mayor.

TOLEDO MANUAL TRAINING SCHOOL.

Instruction in shop work and in free-hand and mechanical drawing, is furnished by the University Board, while the intellectual studies, which must go hand in hand with the development of manual training, are furnished in the Public Schools, in the prescribed Grammar and High School Course.

The practical effect of the united action of these two Boards, is to so enlarge the scope of public instruction in Toledo, as represented by the Grammar and High Schools, as to include instruction in the practical arts, domestic economy, together with free-hand and mechanical drawing. The course, including this instruction, will be known as the Manual Training School Course.

THE ORIGIN AND PURPOSE OF THE SCHOOL.

The object of the Manual Training School is to furnish instruction and practice in the use of tools, with such instruction as may be deemed necessary in mathematics, drawing, and the English branches of a high school course. The tool instruction as at present contemplated will include carpentry, wood turning, pattern making, iron chipping and filing, forge work, brazing and soldering, the use of machine shop tools, and such other instruction of a similar character as may be deemed advisable to add to the foregoing from time to time.

The Manual Training School clearly recognizes the pre-eminent value and necessity of intellectual development and discipline. This school exacts close and thoughtful study with book as well as with tools. It proposes, by lengthening the usual school day a full hour, and by abridging somewhat the number of daily recitations, to find time for drawing and tool work, and domestic economy, and thus to secure a more liberal, intellectual and physical development—a more symmetrical education.

It is believed that, to all students, without regard to plans for the future, the value of the training which can be got in shop work, spending only eight or ten hours per week, is abundantly sufficient to justify the expense of materials, tools and teachers.

THE DEVELOPMENT OF NATURAL APTITUDES.

It occasionally happens that students who have special aptitudes in certain directions find great difficulty in mastering subjects in other directions. In such cases it is often the best course to yield to natural tastes and to assist the student in finding his proper sphere of work and study. A decided aptitude for handicraft is not unfrequently coupled with a strong aversion to and unfitness for abstract and theoretical investigations. There can be no doubt that, in such cases, more time should be spent in the shop, and less in the recitation and lecture room. On the other hand, great facility in the acquisition and use of language is often accompanied by a great lack of either mechanical interest or power. When such a bias is discovered the pupil should unquestionably be sent to the grammar and dictionary rather than to the laboratory or draughting room. It is confidently believed that the developments of this school will prevent those serious errors in the choice of a vocation which often prove so fatal to the fondest hopes.

One great object of the school is to foster a higher appreciation of the value and dignity of intelligent manual labor. A boy who sees nothing in manual labor but dull, brute force, despises both the labor and the laborer. With the acquisition of skill in himself, comes the willingness to recognize skill in his fellows. When once he appreciates skill in handicraft, he honors the workman.

In a Manual Training School tool work never descends into drudgery; the tasks are not long, nor are they unnecessarily repeated. Whatever may be the social standing or influence of the parents, the children go together to the same work, and are tested physically as well as intellectually, by the same standards. The result will be a truer estimate of laboring and manufacturing people, and a sounder judgment on all social problems.

It is not assumed that every pupil who enters this school is to be a mechanic. Some will find that they have no taste for manual arts, and will turn into other paths—law, medicine, or literature. Some who develop both natural skill and strong intellectual powers will push on to a Polytechnic School into the higher realms of professional life, as engineers or scientists. Others will find their greatest usefulness as well as highest happiness in some branch of mechanical work into which they will readily step when they leave school. All will gain intellectually by their experience in contact with *things.* The grand result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more successful manufacturers, better lawyers, more skillful physicians, more useful citizens.

SPECIAL TRADES ARE NOT TAUGHT.

All the shop-work is disciplinary; special trades will not be taught, nor will articles be manufactured for sale. "It is the trained mind and hand that is put upon the market."

The scope of a single trade is too narrow for educational purposes. Manual education should be as broad and liberal as intellectual. A shop which manufactures for the market, and expects a revenue from the sale of its products, is necessarily confined to salable work, and a systematic and progressive series of lessons is impossible, except at great cost. If the object of the shop is education, a student should be allowed to discontinue any task or process the moment he has learned to do it well. If the shop were intended to make money, the students would be kept at work on what they could do best, at the expense of breadth and versatility.

In manual education, the desired end is the acquirement of skill in the use of tools and materials, and not the production of specific articles; hence we abstract all the mechanical processes and manual arts and typical tools of the trades and occupations of men, arrange a systematic course of instruction in the same, and then incorporate it in our system of education. Thus, without teaching any one trade, we teach the essential mechanical principles of all.

THE COMBINED COURSE OF INSTRUCTION

Covers four years, and the school time of the pupil is about equally divided between mental and manual exercises. One hour per day is given to drawing, and two hours to shop-work.

The course of study will embrace five parallel lines—three intellectual and two manual, as follows:

First. A course of pure Mathematics, including Arithmetic, Algebra, Geometry, and Plane Trigonometry.

Second. A course in Science and Applied Mathematics, including Physical Geography, Natural Philosophy, Chemistry, Mechanics, Mensuration, and Book-keeping.

Third. A course in Language and Literature, including English Grammar, Spelling, Composition, Literature, History, and the elements of Political Science and Economy.

Fourth. A course in Penmanship, Free-hand and Mechanical Drawing.

Fifth. (1.) A course of Tool instruction, including Carpentry, Wood Turning, Forging, Soldering, and Bench and Machine Work in Iron. (2.) Instruction in Domestic Economy, including Cookery, Garment Cutting and Making, Clay Modeling, Wood Carving, etc.

Students have no option or election as to particular studies; each must conform to the course as laid down, and take every branch in its order.

The arrangement of studies and shop-work by years is substantially as follows, subject to such changes as experience may dictate:

COURSE OF COMBINED STUDY AND TRAINING FOR BOYS.

Senior Grammar School:

(1) *Mathematics.*—Arithmetic.
(2) *Science.*—Physical Geography.
(3) *Language.*—Grammar, Spelling, Writing, English Composition.

Manual Training School:

(4) *Drawing.*—Free Hand and Mechanical Lettering.
(5) *Shopwork.*—Carpentry, Joining, Jig Sawing. Proper care and use of tools.

SECOND YEAR.

Junior High School, Manual Training School:

(1) *Mathematics.*—Algebra, Arithmetic.
(2) *Science.*—Physiology and Botany.
(3) *Language.*—Grammar, Rhetoric, Writing.
(4) *Drawing.*—Free Hand and Mechanical. Designs for Wood Carving.
(5) *Shopwork.*—Wood Turning, Pattern Making, Wood Carving, Clay Modeling.

THIRD YEAR.

Middle High School:

(1) *Mathematics.*—Geometry, Arithmetic Reviewed.
(2) *Science.*—Physics.
(3) *Language.*—English Composition, History.

Manual Training School:

(4) *Drawing.*—Free Hand and Architectural, Designing from Plant and Leaf Forms.
(5) *Shopwork.*—Forging, Welding, Tempering, Brazing, and Soldering, Moulding and Casting.

FOURTH YEAR.

Senior High School:

(1) *Mathematics.*—Plane Trigonometry, Mechanics.
(2) *Science.*—Chemistry, Book-keeping, Ethics; Rights and Duties; Laws of Right Conduct.
(3) *Language.*—Political Economy, English Literature and Composition.

Manual Training School:

(4) *Drawing.*—Machine and Architectural Details, Decorative Designing.
(5) *Machine Shopwork.*—Clipping, Filing, Turning, Drilling, Planing, etc., Study of Machinery, Care of Steam Engine and Boilers, Study of Electrical Machinery and Gas Engines.

ELECTIVES.

In the first year German may be taken in place of Physical Geography; in the second year in the place of Rhetoric or Physiology; in the third year in the place of History; in the fourth year in the place of English Literature.

Instruction in Mechanical Drawing will be somewhat abridged for pupils who may prefer a wider range in free-hand and decorative work.

Instruction will be given each year in the properties of the materials—wood, iron, brass, etc.—used that year.

Throughout the course, forty-five minutes per day will be given to drawing, and ninety minutes per day to shop-work. The remainder of the school-day will be devoted to study and recitation. Each pupil must recite daily three lessons, which must mainly be learned at home. It is expected that the scholarship of the pupils shall be fully equal to the best high school standards. A diploma will be given on graduation, by the University Directors, in addition to the regular diploma for High School work.

Latin, French and German are optional studies.

The original purpose was to limit the Manual Training School course to three years and to make such period conform to the three High School years. Experience has shown, however, that manual instruction is equally valuable to boys of the Grammar School grade, and therefore the course has now been arranged to include the Senior Grammar School year. But the time required of such pupils in the work-shops will be somewhat abridged.

Ambitious boys, who are sufficiently advanced to enter the High School, will be admitted to the work of the second year, provided they signify a purpose to complete the course and are willing to devote some extra time to laboratory work to cover the exercises of the first year.

DRAWING.

The course in drawing embraces three general divisions:

(1) *Free-hand Drawing,* designed to educate the sense of form and proportion; to teach the eye to observe accurately, and to train the hand to rapidly delineate the forms either of existing objects or of ideals in the mind.

(2) *Mechanical Drawing,* including the use of instruments; geometric construction; the arrangements of projections, elevations, plans, and sections; also the various methods of producing shades and shadows with pen or brush.

(3) *Technical Drawing or Draughting,* illustrating conventional colors and signs; systems of architectural or shop drawing; and at the same time familiarizing the pupil with the proportions and details of various classes of machines and structures.

And as at present arranged will comprise the following:

First Year.—Principles of Projection Drawing; Free Hand Elevation, Plans and Sections of various objects; The use of drawing tools, including practice in pen lining, etc.; Working drawings to scale, including plans, elevations, sections, and details of various machines and parts of machines; Lettering; Free-hand perspective in outline from objects.

Second Year.—Geometrical Construction; Problems in oblique orthographic projection; Water coloring in flat washes; Development of surfaces as applied to sheet metal pattern work; Isometric projection; Free-hand perspective in light and shade from objects.

Third Year.—Pen line shading; Projection of shadows; Mechanical perspective; Architectural working drawings, including plans, elevations, sections perspective, and details of buildings and building construction; Free-hand drawing as applied to architectural ornamentation and enrichment.

Fourth Year.—Water color shading; Machine design and construction; Machine drawing, including the laying out of trains of gearing, etc.; Geometrical ornamentation, and the elements of decorative art work; Free-hand drawing from casts; Pen sketching.

DETAILS OF SHOP INSTRUCTION.

The shop instruction is given similarly to laboratory lectures. The instructor at the bench, machinery, or anvil, executes in the presence of the whole class the day's lesson, giving all needed information, and at times using the blackboard. When necessary the pupils make notes and sketches (working drawings), and questions are asked and answered, that all obscurities may be removed. The class then proceeds to the execution of the task, leaving the instructor to give additional help to such as need it. At a specified time the lesson ceases, and the work is brought in, commented on, and marked. It is not necessary that the work assigned should be finished; the essential thing is that it should be well begun and carried on with resolute speed and accuracy.

THE SMALL AMOUNT OF SHOP PRACTICE.

The time spent in shop-work has never exceeded one and a half hours per day, unless the boys have voluntarily remained after hours for additional practice. Moreover, from these two hours should be subtracted fully ten minutes for washing, dressing, etc. A week, therefore, represents less than eight hours of actual work in a shop. Hence, in placing a value upon the time spent, as men count time, it should be remembered that a "day's work" is all the boys have per week. For carpentry and wood turning they have three hundred hours, or thirty days in all; in forging, moulding, brazing, and soldering, during the second year, three hundred hours. While this time is ample to furnish an intelligent idea of tools and their uses, of the laws of mechanism, of the properties of wood, iron, steel, and brass, and the meaning and force of mechanical words and technical terms, yet it is not so great as to exhaust the boy physically or to be incompatible with a high degree of proficiency in his purely intellectual studies.

The zeal and enthusiasm of the students have been developed to a most gratifying extent, extending into all the departments of work. The variety offered by the daily program has had the moral and intellectual effect expected, and an unusual degree of sober earnestness has been shown. The wholesome moral effect of a course of training which interests and stimulates the ardor of the student is most marked. Parents observe the beneficial influence of *occupation*. The suggestions of the day fill the mind with healthy thoughts and appetites during the leisure hours. Success in drawing or work-shop has often had the effect of arousing the ambition in mathematics and history, and *vice versa*. Gradually the students acquire two most valuable habits which are certain to influence their whole lives, namely: precision and method.

The habit of working from drawings and to nice measurements has given the students a confidence in themselves altogether new. This is shown in the readiness with which they undertake the execution of small commissions in behalf of the schools and the handiness which they display at home.

From the testimony of parents, the physical, intellectual, and moral effect of the school is exceedingly satisfactory.

COURSE OF COMBINED STUDY AND TRAINING FOR GIRLS.—DOMESTIC ECONOMY DEPARTMENT.

FIRST YEAR.

Senior Grammar School:
- (1) *Mathematics.*—Arithmetic.
- (2) *Science.*—Physical Geography.
- (3) *Language.*—Grammar, Spelling, Writing, English Composition.

Manual Training School:
- (4) *Drawing.*—Free Hand and Mechanical, Lettering.
- (5) *Domestic Economy.*—Light Carpentry, Wood Carving, Care and use of tools.

SECOND YEAR.

Junior High School:
- (1) *Mathematics.*—Algebra, Arithmetic.
- (2) *Science.*—Physiology and Botany.
- (3) *Language.*—Grammar, Rhetoric, Writing.

Manual Training School:

(4) *Drawing.*—Free Hand and Mechanical, Designs for Wood Carving.

(5) *Domestic Economy.*—Clay Modeling, Wood Turning, Introduction to course in Cooking, or Garment Cutting and Making.

THIRD YEAR.

Middle High School:

(1) *Mathematics.*—Geometry, Arithmetic Reviewed.

(2) *Science.*—Physics.

(3) *Language.*—English, Composition, History.

Manual Training School:

(4) *Drawing.*—Free Hand and Architectural, Designing from Plant and Leaf Forms.

(5) *Domestic Economy.*—Instruction in preparing and cooking food, Purchasing household supplies, Care of the sick, etc.

FOURTH YEAR.

Senior High School:

(1) *Mathematics.*—Plane Trigonometry, Mechanics.

(2) *Science.*—Chemistry, Book-keeping, Ethics; Rights and Duties, Laws of Right Conduct.

(3) *Language.*—Political Economy, English Literature and Composition.

Manual Training School:

(4) *Drawing.*—Machine and Architectural Details, Decorative Designing.

(5) *Domestic Economy.*—Cutting, Making and Fitting of Garments, Household Decorations, Typewriting, etc.

DESIGN OF THIS COURSE.

The above course in Domestic Economy is arranged with special reference to giving young women such a liberal and practical education as will inspire them with a belief in the dignity and nobleness of an earnest womanhood, and incite them to a faithful performance of the every-day duties of life; it is based upon the assumption that a pleasant home is an essential element of broad culture, and one of the surest safeguards of morality and virtue.

The design of this course is to furnish thorough instructions in applied housekeeping, and the sciences relating thereto, and students will receive practical drill in all branches of housework; in the purchase and care of family supplies, and in general household management; but will not be expected to perform more labor than is actually necessary for the desired instruction.

In cookery practical instructions will be given in the means employed in boiling, broiling, baking, frying, and mixing, as follows:

Boiling.—Practical illustrations of boiling and steaming, and treatment of vegetables, meats, fish and cereal, soup-making, etc.

Broiling.—Lessons and practice in: meat, chicken, fish, oysters, etc.

Bread making.—Chemical and mechanical action of materials used. Manipulations in bread making in its various departments. Yeasts, and their substitutes.

Baking.—Heat in its action on different materials in the process of baking. Practical experiments in baking bread, pastry, puddings, cake, meats, fish, etc.

Frying.—Chemical and mechanical principles involved and illustrated in the frying of vegetables, meats, fish, oysters, etc.

Mixing.—The art of making combinations, as in soups, salads, puddings, pies, cakes, sauces, dressings, flavorings, condiments, etc.

Marketing and Economy, etc.—The selection and purchase of household supplies. General instructions in systematizing and economizing household work and expenses. The anatomy of animals used as food, and how to choose and use the several parts. Lessons on the qualities of water and steam; the construction of stoves and ranges; the properties of different fuels.

*The Textile Fabric Work** will cover instruction as follows:

Plain Sewing.—Seams of all kinds, over casting, plain and French fell, button holes, patching and darning, gathering and placing same on a band.

Plain Sewing.—On the machine, seams, hems, gathering, tucks.

Measuring.

Drafting Patterns.

Cutting.—Fitting and making dresses and undergarments.

Millinery.—The economical and tasteful use of material, etc.

EXPENSES.

For the residents of Toledo instruction in the Manual Training School is free like the other schools; a small charge for material only being made as follows: The first year $6; the second, third and fourth years $9 each; payable one-third at the beginning of the fall, winter and spring terms.

For non-residents of Toledo, tuition is payable as follows:

First year $45; second year $60; third year $75; fourth year $90; payable as above.

Pupils must furnish their own drawing instruments, drawing boards, aprons and overalls. These cost about $6 for the first year and about $4 each for the second, third and fourth years.

Board and lodging may be obtained within easy walk from the school for from $4 to $6 per week. The Superintendent will assist non-resident pupils in obtaining homes.

There is no opportunity in this school for a pupil to pay his way by his labor.

Pupils are expected to be earnest, faithful, truthful, and polite. Every one is expected to do his best, promptly and cheerfully, under all circumstances. The work of the school is supposed to stand first in importance, and parents should not allow trifles to interfere with it. Pupils who fail to make good progress in their work, after reasonable trial, will be required to withdraw.

Absences and irregularities of all kinds are reported to parents. Regular reports of the standing of pupils in each exercise of their class are made to parents every eight weeks.

Upon the recommendation of the Superintendent, graduates of the Manual Training School will be admitted without examination and free of condition to the School of Mechanics and Engineering of Michigan University, Ann Arbor, Michigan; Sibley College, Cornell University, Ithaca, New York; School of Mechanics and Engineering, Ohio State University, Columbus, Ohio.

CONDITIONS OF ADMISSION.

Pupils of the Toledo Public Schools are entitled to enter the Manual Training Department when they reach the Senior Grammar, or Junior High School grades.

Pupils of private or parochial schools are entitled to enter if they are qualified for, and pursue a course of study corresponding in grade to that taken by the regular pupils in the Senior Grammar and High School grades.

Youths who have the same qualifications, but who are not pupils of any school, may enter the classes provided they can pass the required examination and maintain thereafter a satisfactory progress in the intellectual studies required of other pupils.

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* This addition to the programme is given in the Annual Report of the Public Schools of Toledo for the year ending August 31, 1887.

An examination of all pupils applying to enter the Manual Training course (except those who enter through the Grammar and High Schools), will be held in the room of the school building on the last Monday in June, 1886, beginning at 9 o'clock a. m. A second examination of applicants will be held at the same hour on the first Friday in September, 1887. Candidates are strongly advised to take the June examination to learn in what studies they may be deficient, so as to study during the summer months and thus be prepared to pass at the September examination.

No pupils are admitted under thirteen years of age.

Applicants must pass a good examination in the following studies:

(1) In spelling, writing and punctuation, penmanship and the use of capitals, in Grammar to Syntax, and in correct forms of expression in writing.

(2) In Arithmetic to Equation of Payments; tables of weights and measures and their uses.

(3) Common school Geography.

(4) The History of the United States.

HOW THE USE OF TOOLS IS TAUGHT.

The tools of a shop are not given out all at once; they are issued as they are needed, and, as a rule, to all the members of the class alike.

I.—*Carpentry.*

In carpenter work the tools used are: the cross-cut, tenon, and rip saws, steel square, tri-square, level, and gauge, hammer, mallet, rule, and dividers, oil stones and slips. And among edge tools: the jack and smoothing planes, chisels and gouges. Braces and bits, jointer planes, compass saws, hatchets and other tools are kept in the shop tool closet to be used as needed.

The saw and the plane with the square and gouge are the foundation tools, and to drill the pupils in their use numerous lessons are given, varied only enough to avoid monotony. The pupil being able to plane a piece fairly well and to keep to the line in sawing, the first and most important step is to learn to "lay out" his piece properly. This requires great care, attention to details, and precision. Self-taught workmen are always lacking here. The next step is to teach him the use of the chisel in producing simple joints of various kinds. The particular shapes are given with the intent to familiarize the pupil with the customary styles and methods of construction.

Previous to the execution of a lesson in wood each pupil is required to make a working drawing of the same in his book, inserting all necessary dimensions in figures.

The different sizes of the same tool, a chisel for instance, require different care and methods of handling; and the means of overcoming irregularities and defects in material forms another chapter in the instruction to be given.

With the introduction of each tool the pupils are taught how to keep the same in order. They are taught that sharp tools are absolutely necessary to good work. They are also taught, as their lesson progresses, the character and strength and peculiarities of various woods and modes of using them to best advantage.

II.—*Wood-Turning.*

Five or six tools only are used, and from previous experience the pupils know how to keep them in order. At first a large gouge only is issued, and the pupils are taught and drilled in its use in roughing out and producing cylinders and cones; then concave and double-curved surfaces; then in work comprising all these—all in wood turning with the grain. A wide chisel follows, and its use in conjunction with the gouge is taught. After this a smaller gouge, chisel, and parting tool, and a round-point are given, and a variety of shapes are executed. Next comes turning across the grain; then bored and hollow work, chucking and the various ways of manipulating wood on face-plates, mandrels, etc. Finally, turning of fancy woods, polishing, jointing, and pattern work.

In connection with the making of patterns, their use is shown by brief exercises in moulding.

III.—*Wood-Carving.*

In wood-carving, ten or twelve tools are used. The smallest gouge is first taken up and straight and curved lines are cut, with and across the grain. The parting tool follows and reversed curves are cut first on flat and then upon convex surfaces. The straight and skew chisels and a larger gouge are then given out and their use taught in connection with the first tools, by cutting rosetts, vines, etc. After all the tools have been introduced, some practical carving is done requiring the use of all the tools.

The designs to be executed are drawn upon the wood by the pupils themselves.

IV.—*Forging.*

Work in the blacksmith shop is in one essential feature different from any other kind. Wood or cold iron will wait any desired length of time while the pupil considers how he should work, but here comes in temperature subject to continual change. The injunction is imperative to "strike while the iron is hot," and hence quick work is demanded—a hard thing for new hands. To obviate this difficulty bars of lead are used, with which the lesson is first executed, while all the particulars of holding and striking are studied. The lead acts under the hammer very nearly like hot iron, and permits every operation on the anvil except welding.

The various operations of drawing, bending, upsetting, punching, welding, tempering, etc., are learned in connection with the fabrication of hooks, stirrups, chains, swivels, tongs, hammers, and machine tools.

The final exercise in the shop consists in the construction of a set of tools which the pupil will himself use in the machine shop during his fourth year.

One of the most difficult lessons in the art of the smith is that of managing the fire. The various kinds of heat are explained and illustrated, and habits of economy of both iron and fuel are inculcated.

MACHINE SHOP WORK. *

The course includes work at the

Bench.—Use of hammer and chisel, file and scraper, hand-dies, taps and reamers.

Hand-Lathe.—Use of hand-tools, drilling, counter-sinking, filing and polishing.

Engine-Lathe.—Turning, boring with bar and lathe tool, screw-cutting, external and internal chucking and machine-fitting.

Drill Press.—Drilling and boring.

Planer and Shaper.—Producing flat or curved surfaces and fittings.

Care of Tool Room.—The preparation of shop drawings, study of the engine and boilers.

Construction of a machine.

In addition to the Day Manual Training Classes an Evening School for teaching English studies, with drawing and applied mechanics, is maintained throughout six months of the year.

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*Added to the above course in the programme given in the Annual Report of the Public Schools, August 31, 1887.

EVENING SCHOOL.

An evening department is also maintained under the joint control of the Board of Education and the Manual Training School Directors.

This school has been organized to meet the demand of a large number of young people whose occupations absorb the hours of the day, but who desire to devote a portion of their evenings to further study in elementary and technical subjects.

The school is held in the Manual Training building and will open on the first Monday evening in October in each year and continue four evenings in each week for a term of six months.

The pupils must be at least fourteen years of age and be familiar with elementary arithmetic, and be able to write a fair hand.

The course of instruction will be graded to conform to the needs of the pupils and will be advanced from year to year as the classes make progress. Scientific and technical subjects will be illustrated by lectures, drawings, and appropriate apparatus. Pupils are not required to take the full course, but will be allowed to elect such topics as meet their tastes or have a direct bearing upon their occupations.

Thus far instruction in the evening classes has been confined to Mathematics, Physics, and Drawing. It is now proposed to give the evening school a wider scope, and to cover the topics of the day schools so far as a demand for such instruction shall be made to appear, upon application of a sufficient number of pupils. No class will be organized until it shall be made to appear to the satisfaction of the Superintendent of Public Schools that not less than twenty pupils will give continuous attendance upon the course of instruction demanded. Upon such application and information classes will be organized and instruction given by lectures and otherwise upon the topics indicated upon the following page.

Evening classes; Term of six months, Beginning first Monday Evening in October.

Subject of study.	Evenings.	Hours.	Teachers.
Arithmetic:			
Elementary	Thursday	7½ to 8½	F. L. Maguire. R. H. Pratt.
Intermediate	Friday	8½ 9½	
Advanced	Thursday	8½ 9½	
Algebra	Friday	7½ 8½	F. L. Maguire.
American History	Monday	7½ 8½	Miss Mabel Cronise.
Book-keeping	Tuesday	7½ 8½	
Building Construction	Tuesday	8½ 9½	Geo. L. Mills.
Botany	Monday	8½ 9½	Miss Mabel Cronise.
Drawing: Free Hand, Architectural, Mechanical, Ornamental.	Monday and Tuesday.	7½ 9½	Ralph H. Miller, George L. Mills, Walter S. Morgan.
Debating and Literary Society	Tuesday	8½ 10	
English Grammar	Friday	8½ 9½	F. L. Maguire.
Experimental Physics: Light, Heat, Sound, Electricity and Magnetism.	Thursday	8½ 9½	H. C. Adams, Miss Ada Ritchie.
Ethics: Rights and Duties. The Laws of Right Conduct.	....	....	
Geography	Thursday	8½ 9½	R. F. Platt.
Geology	Thursday	7½ 8½	H. C. Adams.
Geometry	Friday	7½ 9½	N. E. Hutchinson.
German: Beginners, Elementary, Advanced.	Tuesday	8½ 9½	Prof. M. Friedberg.
Machine Construction	Monday	8½ 9½	Ralph H. Miller.
Mechanics (Applied): The Scientific Principles relating to Mechanical Operations, Mechanism and Machinery.	Monday	7½ 8½	Ralph H. Miller.
Mechanics (Theoretical): Statics, Dynamics, Hydrostatics and Pneumatics.	Thursday	8½ 9½	H. C. Adams.
Physiology	Thursday	7½ 9½	Miss Ada Ritchie.
Physical Geography	Friday	8½ 9½	N. E. Hutchinson.
Political Economy	Friday	7½ 8½	H. C. Compton.
Science of Government, Civics, Constitutional History, etc.	Friday	8½ 9½	H. C. Compton.
Writing and Reading	....	....	

PRACTICAL DRAWING.

The instruction in drawing will be of special value to carpenters, joiners, woodworkers, masons, bricklayers, painters, plasterers, and will include the study of original designs as applied to manufacture of furniture, ornamental iron work, wall and ceiling decorations, etc.

Brief lectures will be given from time to time upon important topics, viz.: Construction, practical geometrical problems; how to use the T square, set square, and drawing instruments, bisecting of lines; how to draw and indicate center lines, radical lines and dimension lines, etc., line shading, brush shading, scale drawing, detail drawing; how to construct scales, how to proportion and draw hexagon and square nuts, projection of plain objects, construction of block letters, plain and oblique projection; how to indicate the section of different materials, free-hand sketching, styles of architecture, the orders, details, perspective, sketching, scale drawing, sheet-metal pattern work, projection shading, perspective and perspective shading.

These lectures, accompanied by drawings and illustrations upon the blackboard, will impart instruction that will require years of experience in the work-shop to supply.

EXPENSES.

The evening school is practically free, but a nominal charge of $3 to $5 will be made to each pupil, payable in advance. Pupils must furnish their own drawing instruments and drawing material. The instruments and material required the first year will cost from $8 to $10.

Pupils who desire to avail themselves of the opportunity of this school but who hesitate to apply for lack of means for payment of fees or purchase of instruments, are informed that provision has been made for the payment of such charges, for a limited number of pupils, and the parents of such are invited to consult with the Superintendent.

For further information relating to the Toledo Manual Training School and the Evening Department, apply to Ralph H. Miller, Superintendent, at the office of the Manual Training School.

THE BUILDINGS.

The second Annual Report has, as a frontispiece, "a perspective view of the new building which forms the East wing and Adams-street front of the Toledo High School group." Full-page floor plans give, in detail, the four stories of the stately and commodious buildings. The ground plan shows in the Manual Training School wing the Blacksmith and Moulding shops; the first story, the Wood-working and Machine shops; the second story, Wood-working shop and the Domestic Economy room; the third story, two large rooms for Drawing and a Domestic Economy room. This manual-training wing is separated and yet connected with the school-rooms of the main building and a similar wing. These are occupied by the High School and two upper-grade grammar schools.

It will be seen that the experiment of Manual Training in the upper-grade schools is inaugurated in the City of Toledo under exceptionally favorable conditions.

As this report is going through the press I am indebted to the courtesy of Superintendent Compton for the latest published report of the Toledo schools, that for the year ending August 31, 1887. This contains no changes in the programmes of studies, except that in the Girls' department and in the working in iron they are a little fuller. In the first are additional details under the head of textile fabric work, and in the last in the course of Machine Shop work. These are both here added to the course as given in the 1886 report.

The comments by the President of the Board, the Special Committee of the Board in charge of the Manual Training Department, and the City Superintendent, relating to this Department and their conclusions from the results of the year's work, follow. Some statements by Superintendent Compton of general interest as relating to the study of drawing and to clay modelling in the public schools will be given in Appendix Q of this volume; in which appendix, papers especially relating to drawing and its present status in the schools of the United States are included.

The fact that, although there has been a change of Superintendents in Toledo, the Annual Report of the City Board of Education and of the Superintendent for the year 1886–'87 shows so few changes in the Manual Training Department, aside from its evidence of steady increase in attendance, is the best possible evidence that a satisfactory programme of studies and methods has been reached, and the difficulties of cöordinating the exercises of the High School and the Manual Training School, successfully overcome.

Mr. Charles Zirwas, now President of the Board in place of Mr. John C. Rike, who was President when the previous report was issued, says, with justifiable appreciation, when referring to the action of the Board in the past:

> Whoever has observed the management of the schools within the last few years cannot have failed to observe, I think, that our Board has not been slow to engraft upon our educational system such new features as would render it most practical and useful to the masses of the people. This is notable in the case of Manual Training, which has now become, after the gradual progress of four years, a conspicuous and very successful feature of our schools. The elegant building, the excellent equipment, the able corps of teachers and the deep interest and enthusiasm manifested by the pupils render the Manual department a source of pride and pleasure to its managers and to all our people.
>
> We may congratulate ourselves that the people bear with patience and confidence that degree of taxation which is necessary to educate the children and train them for happiness and good citizenship. It goes to prove the fact that the people know that the money devoted to enlightening the youth is the surest and readiest means of securing and maintaining a free, prosperous and happy country.
>
> * * * * * * *
>
> The Kindergarten work has already become a strong feature of the school systems in some of our larger cities, and the time is not far distant when its excellent method of training children and preparing them for the higher work will imperatively claim our attention.

He closes with commendation of the successful administration of his duties by Superintendent Compton.

The Committee of the Board directly in charge of the schools report as follows upon the experiment begun the year before of evening classes.

In commenting on the unusually large number of boys graduating from the High School, it will be seen that they give credit for this desirable result largely to the influence of the Manual Training Department. They say:

> The *Evening School* was fairly successful. There was an enrollment of forty-four pupils, ranging in age from fourteen to forty-five years. A large proportion of these were young men engaged in some mechanical employment, who wished to acquaint themselves more fully with free hand and mechanical drawing, and the higher Mathematics. We sincerely hope that this School may receive more generous patronage in the future. It is free to all.
>
> The graduating class contained the largest number of boys that has ever yet finished the course of study, in any one year. This speaks well for the practical nature of the studies, and the influence of Manual Training upon the high school boys.
>
> The class for next year now enrolls between sixty and seventy members, and nearly all of these will complete the course in the coming June. This is an encouraging indication of the popularity of the High School and the growth of our City.
>
> The management of our schools, under the directions of Superintendent H. W. Compton, has been successful to a marked degree. The latest and most improved methods have been introduced, and we believe our schools rank among the best in the State.
>
> H. D. PIERCE,
> F. HUBBARD,
> C. ZIRWAS,
> *Committee.*

The Superintendent reports as follows of the Evening School:

EVENING SCHOOL.

> The Evening School opened November 1, 1886, and closed May 6, 1887. Forty-five pupils were enrolled ranging in age from fourteen to forty years. The subjects taught were Constructive Drawing, Arithmetic, Algebra and Geometry, with occasional talks on Physics and the invention and development of labor saving machines.
>
> All the pupils took drawing. Eighteen took Arithmetic. Ten took Algebra and Geometry alternately.
>
> All the classes in mathematics attended the lectures on Physics and Inventions. The cost of fuel, light, care of rooms and instruction for the entire term was $456, an average of $10.13½ to each pupil. Every pupil was required to pay an incidental fee of $3. The school so far as patronage or attendance was concerned was only fairly successful. Many of the young men were not regular in attendance and a number dropped out before the close of the term. No compulsion was used in any way as it was hoped that the advantages offered would prove sufficiently attractive to hold the pupils without any rigid rules to regulate them.

His report closes thus:

> The thanks of all friends of education are due to the directors of the Manual Training School for the excellent laboratory and recitation room furnished to the High School for the department of Physics and Chemistry and for their prompt assistance in blending and unifying the work of the Manual department and High

School. Especially active and zealous in this direction, giving much of his time and attention to the work, has been Mr. A. E. Macomber.

Following will be found the report of the High School, German Department, and Manual Training School.

Respectfully submitted.

H. W. COMPTON,
Superintendent.

Mr. H. C. Adams, principal of the High School, says the last graduating class contained "the largest number of boys that has ever graduated in any one class from the Toledo High School." He agrees with the Committee in attributing this to the influence of the Manual Training School. While special reports by the principals of the High School and the German Department follow as announced as above by the Superintendent, no report appears from the principal of the Manual Training Department.

The list of teachers and programmes of courses are given, but no statement descriptive of the work of the year.

From a letter under date of September 12, 1888, received from Superintendent Compton as these pages are in the printer's hands, the following statements are taken. They are in reply to certain inquiries as to the statistics of the past year, as to what proportion of the school children had the right of entrance to the Manual Training School, and as to any recent changes in the personnel or courses of instruction of the school.

The Superintendent writes:

Our manual course is open only to our four highest classes, viz, "A," Grammar, or Eighth Grade; "Junior" High School class, or Ninth Grade; "Middle" High School class, or Tenth Grade; and "Senior" High School class, or Eleventh Grade. Any pupils of these classes, girls or boys, can take the course. It is purely elective. About half of the pupils in these classes choose the manual work. Last year (1887-'88) as follows:

	Pupils.
Senior Grammar (eighth year)	94
Junior High (ninth year)	90
Middle High (tenth year)	47
Senior High (eleventh year)	38
Total	269

To this number should be added the 35 irregular pupils, consisting of post-graduates, etc., making a grand total of 304 in all departments of manual work.

In reply to an inquiry as to what proportion of *all* the children attending the city public schools were in the Manual Training classes, he writes:

The work is only accessible to those in the Central or High School Building. One-half of these take it. We enroll about 9,000 pupils in the city; so you see a very small percentage reach the last four years of the course. As to the "Summary" which you ask for I can only say that our school continues to increase in popularity and usefulness. We have added a department for cutting and fitting of garments, which is quite successful. We are now contemplating adding a printing department. I can reiterate everything I said before as to the educational value and utility of the work. A larger number of pupils enter this year than ever before; about 360.

He announces that Mr. Ralph Miller has retired from the principalship of the school, and is succeeded by Mr. George S. Mills, who has been appointed as managing Principal and Teacher of Drawing.

NEED SHOWN OF INDUSTRIAL TRAINING IN THE ELEMENTARY SCHOOLS.

The imperative need of the introduction of some forms of industrial training in the lower elementary schools, if the great body of the pupils are to be benefited, is emphatically shown by the figures given by Superintendent Compton. In this enterprising city of Toledo, with its unsurpassed advantages, out of 9,000 children only about 500 reach the grades in which there is access to the Manual Training School, and only *half* of this "remnant" availed themselves of this opportunity during the past year! Surely the Manual Training Schools are wholly inadequate to teach the masses. Let us hope they may at least be able to train the future captains of industry. But it would be as unfair to condemn this class of schools for this feature as it would be to judge the universities or academies of higher learning for similar characteristics. As the latter elevate the standard of all the lower schools and institutions of learning, so the example and influence of these Manual Training Schools may be expected to stimulate and lift up the standard of industrial training in all the lower grades of public schools.

It is clear, however, that their direct influence on pupils attending, since the number of scholars in these schools is so limited, can be neither so detrimental in its effects nor so potent for good to large numbers, as either the opponents or advocates of these special schools have contended. In this, as in every investigation of the public schools, the one alarming feature of a wholly inadequate attendance constantly obtrudes itself upon the attention. What profit is it for the advocates of rival methods of education to contend for this or that plan, when the great mass of children fail, by reason of so brief attendance, of the opportunity to receive anything but the most limited and inadequate elementary training?

In the list of Directors of Toledo University, the only change from that of the previous year is that the name of M. J. Cooney appears in place of that of M. D. Carrington.

TOLEDO MANUAL TRAINING SCHOOL.

OFFICERS AND TEACHERS IN DEPARTMENT OF MANUAL TRAINING, 1886-'87.

Harvey W. Compton, Superintendent of Public Schools; Henry C. Adams, Principal of High School; Ralph H. Miller, Superintendent of Manual Training School and General Instructor; Noah W. House, Instructor in Iron Work, Wood Turning, Wood Carving, etc.; George S. Mills, Instructor in Drawing; George S. Waite, Instructor in Carpentry, etc.; Miss Nellie E. Rawson, Instructor in

Domestic Economy Department, Cookery, etc.; ——— ———, Instructor in Garment Cutting and Making; ——— ———, Assistant Teacher in Drawing.

The Report for the year ending August 31, 1887, adds the name of Miss Nellie Fockens, Instructor in Sewing, Garment Cutting and Making, Free Hand Drawing, and Clay Modelling.

MANUAL TRAINING HIGH SCHOOL AT OMAHA, NEBRASKA.

In the Annual Report of the United States Commissioner of Education for 1884–'85 appeared a communication from Hon. H. M. James, Superintendent of the Schools of Omaha, in which he stated that "the idea of a High School workshop was first born in July, 1885." The shop was equipped ready for use in October, 1885, and a graduate from the Manual Training School attached to Washington University, Saint Louis, one of Professor Woodward's pupils, was secured as teacher. Superintendent James reported the experiment as promising well.

In reply to a request for later information, Superintendent James courteously returned the following letter, with enclosures:

OMAHA, NEBR., *January* 19, 1887.

DEAR SIR: Your favor of the 7th instant, asking for additional information concerning the working of Manual Training in our High School, came duly to hand. I enclose a few pages from the last annual report of the schools containing the remarks of the superintendent and the report of the Committee on Manual Training. This constitutes all the printed matter we have on the subject.

After an experience of a little more than a year, it can be said that our venture has been a success. The progress of the boys has astonished us all. Without interfering with the academic work in the least, they have acquired more skill in the care and use of tools than apprentices are expected to have after a year or more of training in the usual way. The work has been very popular with the boys and with the public, and there is no difficulty in finding enough applicants for all the places in the shop. There were fewer withdrawals from the school last year among the manual-training boys than from any other equal number in the high school.

Although we have thus far made the work optional, and have expected from the shop boys the same amount of academic work as from the others, I am inclined to think it would be more satisfactory to make a special course for the manual training, and in this course reduce the academic work to some extext. In a large high school this could be easily done, and while many will be willing to take the hour and a half spent daily in the shop from their recreation, it is doubtful if it is advisable to make it necessary in every case.

I do not desire, at this early stage of our experience, to draw very many conclusions, but all who have watched the progress of our experiment are encouraged to believe that it can be made a permanent success, and an actual benefit to the High School.

You will please to understand that what I have here written is in no sense intended as a substitute for what has been written before,* but as supplementary.

Yours, respectfully,

H. M. JAMES.

Hon. I. EDWARDS CLARKE,
Washington, D. C.

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* See Report of United States Commissioner of Education for 1884–'85, p. CCXL.

MANUAL TRAINING.*

The introduction of manual training into the High school and eighth grade has been one of the most interesting features of the work of the year. The ends to be accomplished by this kind of training have been much discussed, but there has been great uncertainty as to the best means of securing the desired results. Technical schools in large numbers have been established and conducted with excellent success, but the pupils in these schools differ widely from those in city High schools. The best authorities are not agreed as to the desirability of making industrial training a part of High school education. And, with this point conceded, it is not certain what the character of the training should be. Our year's experience is a valuable contribution to the discussion now going on, but, under the circumstances, all undertakings of this kind must be looked upon as experimental. Since the 1st of October, 1885, seventy-nine boys, about evenly divided between the High school and the eighth grade, have had the benefit of this instruction. The course has been optional, those taking it doing the same academic work as the rest of the school. Arranged in classes of twenty each they have spent one and one-half hours daily in the shop under the care of a competent instructor, learning light carpentry and how to use and take care of tools. The teacher has been enthusiastic and the interest of the boys has been lively and well sustained. The aggregate amount of time spent in the shop amounts to less than a month of nine hours a day, and yet the progress of the boys has been remarkable. Few apprentices, after a full year in the shop, acquire more practical skill.

It is evident that manual training schools cannot be conducted without considerable expense, but for this year our shop has not cost more than some of the regular studies of the High school. It seems evident, also, that a department of this kind has a tendency to hold boys in school at a time when there is a strong inclination to leave and go into business. Our High school and eighth grade have felt this influence, and suffered from it as much as any school in the land; yet of the 79 boys who took manual training last year, 75 remained in school to the close of the year. This is a remarkable fact in the history of the Omaha schools.

On the whole, our experiment with a manual training department in our High school, as far as it has gone, must be considered a success. It has not interfered with the regular academic work; it has not been excessively expensive; its influence on the High school generally has, on the whole, been favorable, and the progress of the boys in the mechanic arts has been satisfactory. It is not too much to say that the hopes of its friends have been fully realized.

REPORT OF COMMITTEE ON MANUAL TRAINING.

OMAHA, *November* 3, 1886.

To the Honorable Board of Education of the City of Omaha:

GENTLEMEN: Your Committee on Manual Training herewith submit their second annual report. We make a special report of this department of school work in Omaha, because, during the year, so many visitors have examined this school, and because there is a general interest throughout the country in its success. Omaha has led off in this combination of manual and book training. First among the cities of the United States, we have made manual training a part of study for the High school and eighth grade. Many other cities are waiting to see whether we succeed or fail before adopting a similar system. We believe that we have adopted a plan which will do much toward removing the prejudice against manual labor now so widely prevailing, and, what is more important, will contribute largely toward the symmetrical development of brain and hand. We cannot emphasize too strongly the value of this system, which we believe in time will come into general use.

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*From Report of the Board of Education of Omaha, Nebraska, for 1886. Report of Superintendent James.

AIM.

The aim of our manual training school is not to teach the pupils a trade, but to prepare them for greater proficiency in a trade should they conclude to become mechanics. To this end the pupils are carefully instructed in working from drawings made by themselves; and so successful has the school been in this direction that the pupils who took the course last year before the end of the year could construct, from drawings placed in their hands, quite elaborate pieces of work. The further aim of the school is to teach the pupils the use of tools and to enable the eye and the hand to work together harmoniously. To the well trained brain we add an eye and a hand equally well trained, thus increasing the equipment of the pupils for the practical work of life. Your committee would emphasize the fact that the manual training department of the school work is *not* intended to teach the pupils a *trade*, but to develop certain faculties which are not developed in the ordinary school work. And these faculties are as valuable to the girls as to the boys.

EXPENSE.

For the Carpentering and Joining Department.

Twenty benches for 80 boys	$286.00
Per Bench	14.25
Tools for 80 boys	510.00
Tools per boy	6.35
Expenses for gas and water service	92.00
Material used	200.00
Teacher's salary	900.00
Expense per boy	24.85

For Wood-turning Department.

Twenty lathes	580.00
Shafting, pulleys and belting	188.45
Engine and boiler	225.00
Wood-turning tools	140.05
Setting up lathes	200.00
Total expense for wood-turning department	1,333.50
Expense per boy	16.68

Expense apart from permanent investment.

For 80 pupils, tuition	1,050.00
Material	200.00
Wear and tear of tools	200.00
Total expense	1,450.00
Expense per pupil	18.12

Your committee confess to a laudable pride in securing so much for so little; more than half of the money expended is for a plant which will be good for years to come. The actual expense per pupil, apart from the plant, which is a permanent investment, is only $18.12. These figures settle the fact that other cities need not be deterred, on the ground of expense, from inaugurating this system in connection with their schools.

PRESENT CONDITION.

In consequence of the delay in the building of a boiler house, which would vacate the fuel room now in use, the pupils who desired a second year's course in manual training have not yet begun their work. By the first of January your committee hope to have the room in readiness. So far as can be ascertained before the actual work begins, there will be rather more than two full classes of twenty each to go on with the manual training. This number would have been larger could the classes have been formed at the beginning of the term.

This year two classes have been formed for carpentry and joining—one of 21, another of 17. The falling off from the numbers of last year is due to the fact that 40 of the boys of the ninth grade took manual training last year, and to the further fact that there is but one eighth grade class in the High school building this year, instead of three classes, as last year.

Four girls have been permitted to join one of the first year classes, and are doing excellent work. This is an entirely new departure in manual training, and your committee are watching its success with great interest.

RESULTS.

The results of last year's work, as shown in the work finished for the examination at the end of the year were a surprise to all who saw them. Various useful pieces of work were constructed, the pupils deciding for themselves what they would make. The work was done from drawings made by the pupils, and in many instances would have done credit to a more than average mechanic. The time spent in the actual work under direction of the teacher would amount to about one month, allowing for a day's work the usual hours required in a shop; and in this short time the pupils learned to handle and sharpen their tools and to work from drawings. We are pleased to be able to report that in their other studies the pupils of the manual training school did good work in some cases, showing a marked improvement. And it is especially to be noted that the boys who received the training last year showed in their other studies an appreciation of their practical value not shown by other scholars, which fact was especially noticeable in the study of mathematics, which was taken out of the theoretical and placed among the practical studies. This we consider a great gain in education.

In conclusion, your committee would again express their gratification at having secured the services of Mr. A. Bumann, who is eminently the right man in the right place, and to whose zeal and enthusiasm much of the success of his department is due. We can no longer regard manual training in connection with the High school as altogether an experiment, but feel justified in asserting that it has been proved to be a valuable part of the educational system best adapted to American youth.

W. E. COPELAND.
H. E. DAVIS.
H. G. CLARK.

THE MANUAL TRAINING SCHOOL OF PHILADELPHIA, PENNSYLVANIA.

The extracts already given from the then latest Report of the Philadelphia Board of Education, that for 1885, show that President Steel considered the establishment of the Manual Training School the most important step taken by the Board during the year.*

The following description of the building used for this novel school is taken from an educational journal. The Report made to the Committee of the Board in charge of the school by the Principal, with the schedule of studies as given in the Annual Report of the Board, and the extracts from the By-laws of the Board, reciting the provis-

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*See *ante*, Chapter XIV, page 173, *et. seq.*

ions relating to the management of the school which follow, furnish the authentic data needed for comparison with other schools of its class:

THE NEW MANUAL TRAINING SCHOOL OF PHILADELPHIA.*

Great interest is felt among the teachers and pupils of the public schools over the new manual training school. The old Hoffman schoolhouse has been remodelled inside to meet the requirements of the department, and extensive preparations have been made for instructing boys in all the branches of useful mechanics. The building is one of the old bluestone structures, roomy, but wastefully constructed, three stories in height, and standing on the northeast corner of Wood and Seventeenth Streets. Staircases are placed at the four corners, encased in towers, affording rapid egress. The ground floor is devoted to bench-work. A large hall, divided by sliding glass doors into two halves, takes up the entire space. The front compartment is fitted up with benches for twenty pupils. These benches are handsome, hard wood, varnished affairs, each fitted with four swivel vices, and each supplied with a machinist's hammer, dividers, calipers, files, chisels, punches, etc. In this room all varieties of rudimentary and manual iron and metal work will be taught. Twenty boys will constitute a class, and they will be, step by step, instructed in all branches of a machinist's trade.

THE MODEL-MAKERS' ROOM.

In the rear room are twenty model-makers' benches—handsome pieces of furniture—and they have in the drawers all the tools used by model-makers in the most intricate wood-work. Three cabinets for tools and specimens of work are built against the walls. A glass partition in the rear of this room incloses twenty marble hand-basins, where the ablutions of the young mechanics will be performed. Hot and cold water, towels and soap will at all times be ready in this room. The floor is of fat pine, the ceilings are high, and windows on four sides admit ample light and air. Four large closet-rooms on this floor will be used for hanging working clothing.

On the second story the class rooms are situated. Here, also, the space is thrown into one hall, but sliding glass doors divide the hall into four class rooms when occasion demands. There are single desks for 120 pupils in this room, and nothing more. Here, also, there is admirable light.

The third story is devoted to mechanical and free-hand drawing, and most conveniently are the appliances arranged. The large hall is taken up with forty standing tables, roomy and handsome. A cabinet in an anteroom will contain the drawing or stretcher board, on which the drawings will remain until completed. These boards are numbered, and they fit in numbered grooves in the cabinet. On the top of each board a neat T square and other drawing implements rest. The heating of the building will be secured through hot air furnaces in the cellar.

THE COURSE OF STUDY.

The new school is something in the nature of an experiment, and it will be at least two years before it is in thorough working order in the higher branches. The course covers three years of study, the pupils being admitted *pro rata* from all grammar and consolidated and combined schools. The hours will be from 9 A. M. to 2.30 P. M., two hours being devoted to study and recitation, one to drawing, and two to shopwork. Promotions to the school will be made at the close of the June school term, and the boys will be admitted in the order of their marking. The course of study is comprehensive and thorough.

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* From The Teacher, Philadelphia, November, 1885. See page 83.

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REPORT OF THE PRINCIPAL OF THE MANUAL TRAINING SCHOOL.*

To the Manual Training School Committee:

GENTLEMEN:—I respectfully submit the report of the Manual Training School for the year ending December 31, 1885.

Owing to the supplementary examination, held September 10–12th, to meet the demand for further admissions, the School was not fairly in operation until September 15th; when the number of pupils enrolled was 132. With three exceptions—in which admissions were made from the Central High School—the pupils were from the Twelfth and Thirteenth Grades of the Grammar Schools, and of an average age of fourteen years seven months.

The attendance since the opening of the School has been as follows:

September 15th to the 30th	129.4
October	130.0
November	129.5
December to 23d	125.0
Average attendance (nearly)	128.5

The Course of Study is shown by the accompanying programme, which also pretty clearly shows the organization of the School. The letters A, B, and C, in the column marked classes, indicate the three principal divisions of the pupils, which divisions, for instruction and convenience in handling, are again divided into classes—containing at most twenty-two pupils each—known as A^1, A^2, B^1, B^2, etc.

I have much pleasure in inviting the attention of the Committee to the progress of the pupils in all departments of the School, and in commending the zeal and efficiency of the teachers, without which, results so satisfactory could not have been obtained. The pupils have, from the beginning, manifested particular interest in the Manual Instruction, including Mechanical Drawing, and in consequence have attained a degree of proficiency in these branches entirely beyond expectation.

In designing the forms which constitute the lessons in wood and metal work, respectively, care was taken that each should embody an important mechanical unit or principle, that they should be progressive, and that only as much material should be used in each as was consistent with bold and manly work. The forms in wood number from 1 to 20, and comprise principles common in carpentry and joinery. The metal forms, numbering from 1 to 10, are mainly of sliding surfaces peculiar to machinery.

All work is done by hand from the rough materials.

Each pupil is provided with an exact drawing of the object he is required to make.

The Mechanical Drawing is taught with less attempt at elaborate composition in beginning than is practiced in many schools; the object thus far having been to ground the pupils well in principles and in the use and care of the instruments, for which purpose numerous "setting-up" exercises have been devised. It has also been the purpose to harmonize the drawing with the shop-work, which, it is believed, will prove advantageous to both branches.

In the scholastic branches, as literature and mathematics, the most approved methods of teaching are employed, and with quite satisfactory results. I would, however, advise an increase in the requirements in these branches for admission.

With respect to the educational value of Manual Training, taken in connection with the usual studies of a school of this grade, the experience of the few months since the opening of the School would seem to point to a complete confirmation of these facts:

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* Sixty-seventh Annual Report Philadelphia Board of Education. See pages 101–104.

First. That it relieves school-life of much of the tedium incidental to purely mental effort; that the alternation of hand with head-work makes them mutually restful and beneficial.

Second. It gives to the pupil a clearer conception of the purposes of education, and what really constitutes it.

Third. It teaches habits of accuracy, industry and physical activity; dignifies and elevates labor; develops the creative faculty, and begets a feeling of confidence and independence based upon the conscious possession of useful practical knowledge.

The School has attracted very general public attention, and has been visited by many persons of distinction in educational and other departments, a number of whom were from foreign countries; all of whom accorded it very high praise, both with respect to its equipment and as typifying the requirements of modern education.

Very respectfully,

ROBT. CRAWFORD,
Principal.

Daily order of exercises and class organization of the Philadelphia Manual Training School, first year.

MONDAY.

Classes.	9 to 11 A. M.	11 A. M. to 1 P. M.	1 to 1.30.	1.30 to 3.30 P. M.
A	Literary department: Literature, elocution.	Drawing and mathematics.	Recess..	Shop: Metal work, wood work.
B	Shop: Metal work, wood work.	Literary department: History, physical geography.	...do....	Drawing and mathematics.
C	Drawing and mathematics.	Shop: Metal work, wood work.	...do....	Literary department: Composition, physiology.

TUESDAY.

A	Drawing and mathematics.	Shop: Metal work, wood work.	Recess..	Literary department: Composition, physiology.
B	Literary department: Literature, elocution.	Drawing and mathematics.	...do....	Shop: Metal work, wood work.
C	Shop: Metal work, wood work.	Literary department: History, physical geography.	...do....	Drawing and mathematics.

WEDNESDAY.

A	Shop: Metal work, wood work.	Literary department: History, physical geography.	Recess..	Drawing and mathematics.
B	Drawing and mathematics.	Shop: Metal work, wood work.	...do....	Literary department: Composition, physiology.
C	Literary department: Literature, elocution.	Drawing and mathematics.	...do....	Shop: Metal work, wood work.

THURSDAY.

A	Literary department: Civil government, physical geography.	Drawing and mathematics.	Recess..	Shop: Metal work, wood work.
B	Shop: Metal work, wood work.	Literary department: Civil government, physiology.	...do....	Drawing and mathematics.
C	Drawing and mathematics.	Shop: Metal work, wood work.	...do....	Literary department: Language, physiology.

Daily order of exercises and class organization of the Philadelphia Manual Training School, first year—Continued.

FRIDAY.

Classes.	9 to 11 A. M.	11 A. M. to 1 P. M.	1 to 1.30.	1.30 to 3.30 P. M.
A	Drawing and mathematics.	Shop: Metal work, wood work.	Recess.	Literary department: Language, physiology.
B	Literary department: Language, physical geography.	Drawing and mathematics.	...do....	Shop: Metal work, wood work.
C	Shop: Metal work, wood work.	Literary department: Civil government, physical geography.	...do....	Drawing and mathematics.

ROBERT CRAWFORD,
Principal.

COURSE OF INSTRUCTION AND TRAINING IN THE MANUAL TRAINING SCHOOL.*

First Year.

Arithmetic (reviewed); Algebra (begun).

English Language; Structure and use; study of selected classics.

United States History and Civil Government.

Physiology and Physical Geography.

Free-hand and Mechanical Drawing.

Shop-work: Carpentry and joinery, wood-carving, wood-turning, pattern-making; proper care and use of tools.

Second Year.

Algebra (finished); Geometry (begun).

Physics: Experimental work in the physical laboratory and lectures; Principles of Mechanics.

English Composition and Literature. General History.

Geometrical and Mechanical Drawing. Designing.

Shop-Work: Forging, welding, tempering, soldering, brazing, moulding and casting; proper care and use of tools.

Third Year.

Geometry (finished); Plain Trigonometry and Mensuration.

English Composition and Literature. Social Science.

Elements of Chemistry—Laboratory work and lectures. Principles of Mechanics.

Book-Keeping.

Machine and Architectural Drawing. Designing.

Shop-Work: Bench-work and fitting; turning, drilling, planing, screw-cutting, etc. Study of the steam engine, including management and care of steam engines and boilers.

Elementary Principles of the textile and fictile arts, stone-work and masonry.

Instruction to be given in the properties of materials—wood, iron, brass, clays, stone, wool, cotton, etc., throughout the course.

MANUAL TRAINING SCHOOL.

[Northeast corner of Seventeenth and Wood Streets.]

List of Teachers.

Robert Crawford, Principal; William L. Sayre, Vice-Principal.

Assistants.—E. S. Zieber, M. D., J. J. D. Brush, A. B. Entwisle, D. C. Redgrave.

L. A. Du Bree, Janitor, 1834 Wood Street.

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*Sixty-seventh Annual Report Board of Public Education, Philadelphia. See page 211 *et seq.*

OFFICIAL REGULATIONS.

XXV.*

Duties of the Committee on the Manual Training School.

They shall have the general direction of the school, shall visit the school semi-monthly, keep regular minutes of their proceedings, and report annually the state of the school. They shall nominate to the Board the teachers who shall be needed in the school, and in case of a vacancy shall recommend to the Board a suitable person to fill the same.

They shall award a certificate to such of the pupils as shall meritoriously complete the Course of Study prescribed for the school.

XXVI.†

I. The daily sessions of the Manual Training School shall be five hours, beginning at 9 A. M. and closing at 2.30 P. M., with an intermission of thirty minutes at 12 M. Two hours of this time shall be devoted to study and recitation, one hour to drawing, and two hours to shop practice.

II. Promotions to the Manual Training School shall be made at the close of the June term, from the Twelfth grade of the Boys' Grammar, Consolidated, and Combined Schools; but no boy shall be promoted who is under fourteen years of age.

The Committee on the Manual Training School shall designate the time of holding *the examination for promotion*, and make all necessary arrangements for the same.

III. It shall be the duty of the Principals of the several Boys' Grammar, Consolidated, and Combined Schools to certify to the Superintendent of Schools the names of all boys of the proper age who have finished the Course of Study in the Twelfth grade, and are desirous of promotion to the Manual Training School.

IV. The examination for promotion to the Manual Training School shall be under the direction of the Superintendent of Schools, who shall be assisted by a sufficient number of Principals of Boys' Grammar, Consolidated, and Combined Schools, to be designated by the Committee on the Manual Training School.

V. The examination for promotion shall include:—Reading and Spelling, Grammar and Composition, Penmanship, Arithmetic, Geography, United States History, Drawing.

A minimum average of 60 per cent. shall be required in Reading and Spelling, Grammar and Composition, Penmanship and Arithmetic; and a general average of 70 per cent. in all the branches.

VI. The number of pupils to be admitted from any school shall be the *pro rata* of the number from that school who pass the required examination to the whole number who can be received into the Manual Training School. Schools having more pupils who have passed the examination than can be received shall have their respective surplus number of pupils admitted *pro rata* to the aggregate number of vacancies in the Manual Training School, as the same may occur.

The pupils of each school shall be admitted in the order of their averages.

That this experiment has proved a success may be inferred from the account of the Industrial Exhibition held May, 1888, of the work of pupils of the Philadelphia Public Schools, which is given in pages 232–236 of this volume.

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* By-laws of the Board of Public Education, Philadelphia. Sixty-seventh Annual Report, page 387.

† Rules of the Board of Public Education, Philadelphia. Sixty-seventh Annual Report, page 402.

MANUAL TRAINING SCHOOL OF CLEVELAND, OHIO.

The recent movement in this city which has resulted in enabling the school authorities to offer to the higher grade public school pupils opportunities for Manual Training, furnishes a very striking illustration of the quickening influence of a good example. The munificent action of the late Mr. Scott in endowing the "Toledo University of Arts and Trades," with the subsequent steps by which the School authorities of that city were enabled to avail themselves of this costly plant for the use of public school pupils, undoubtedly led to the movement by which a few public spirited citizens of Cleveland combined to establish a corporate Manual Training School which, when once established, they offered to the public school authorities under certain conditions. These having been complied with, the school children of Cleveland can now enjoy similar advantages to those afforded to the schools of Toledo, yet with modifications, which give to this school its own individuality.

I am indebted to the courtesy of the City Superintendent, L. W. Day, Esq., for the following succinct statement of the circumstances attending the origin of the school and its adoption by the school authorities:

THE HISTORY OF THE MOVEMENT.

A Manual Training School was organized in this city as a private enterprise in June, 1885. It was regularly incorporated under the laws of the State, and for two years has been conducted in a most creditable and successful manner. A site was purchased, buildings erected, machinery put in, a three years' course of instruction devised, teachers employed and good work done. All this cost money and rendered it impossible for many worthy young men and boys to pay the necessary tuition—$40 per year. The success of the school called public attention to the matter and a movement was set on foot to place the enterprise in the hands of the public school authorities. This movement was warmly encouraged by the Manual Training School authorities, who proposed to turn over the free use of their buildings, machinery, etc., etc., to the Board. The Board of Education in January last petitioned the State Legislature for authority to levy a tax of two-fifths of a mill annually to defray the expense to be incurred in the establishment and maintenance of Manual and Domestic Training Schools in this City. This authority was promptly granted, and the tax has already been levied.

It is not the purpose of the Board to purchase the "plant" of the incorporated company who have hitherto been managing the Manual Training School, but only to pay the bills necessarily incurred in the regular running of the school, on condition of free tuition to Public School pupils.

The sole management of the school is vested according to law, in a Board of fifteen (15) Directors, eight of whom are chosen by the incorporated company, and seven by the Board of Education, the Superintendent of Instruction being, ex-officio, a member, and one of the seven. The funds realized from the two-fifths mill levy will be turned over to the Board of Directors for the defraying of current expenses. The Board of Directors have authority to appoint and discharge teachers, arrange course of study, etc.

By this arrangement, tuition in our Manual Training School is made free to all pupils of the Public Schools, who are eligible, excepting a charge of five dollars a term (half year), for materials used. In case of indigence, this amount will also be reduced or entirely remitted.

Following is the course of study:

First Year.—Free hand and mechanical drawing; carpentry and joining; pattern making; care and use of tools.

Second Year.—Geometrical and mechanical drawing; forging, welding, tempering, filing and chipping.

Third Year.—Machine and architectural drawing; machine shop work; study of machines, steam-engines and boilers.

All pupils who have successfully passed the examination for admission to our High Schools are entitled to free tuition, but no pupil under fourteen years of age can enter. Pupils other than those from the Public Schools may be admitted on the payment of a tuition fee of fifteen dollars per term and five dollars for materials, provided they have successfully passed an examination equivalent to that required for admission to our High Schools. The work of the Manual Training School has not as yet been made a part of the High School course, but is supplemental to it, the instruction and work being done after High School hours by pupils of the schools.

The following account of the origin and progress of the school is from a handsomely printed eight page quarto sheet entitled "Manual Training," Cleveland, Ohio, January, 1887:

THE CLEVELAND MANUAL TRAINING SCHOOL.

ITS ORIGIN AND HISTORY.

In February, 1885, a small carpenter shop was started in a barn situated on Kennard street, near Euclid avenue, for the benefit of some boys, then pupils in the Central High School.

Through the diligence and enthusiasm of those boys the little school and the value of manual training was brought to the notice of some of the business men of the city.

One or two meetings were held, at which the question of the establishment of a manual training school in Cleveland was thoroughly discussed. It was decided to form a stock company with a capital of $25,000, with which money to erect and equip a building, and then to charge a tuition fee just sufficient to cover the running expenses.

The Cleveland Manual Training School Company was incorporated June 2nd, 1885, for the purpose (as stated in its Articles of Incorporation) of "the promotion of education, and especially the establishment and maintenance of a school of manual training, where pupils shall be taught the use of tools and materials, and instruction shall be given in mechanics, physics, chemistry, and mechanical drawing."

THE FIRST BOARD OF DIRECTORS.

The members of the company met on September 7th, 1885, and elected a board of directors, consisting of Messrs. Samuel E. Williamson, Thomas H. White, N. M. Anderson, Samuel Mather, L. E. Holden, J. H. McBride, E. P. Williams, Wm. E. Cushing, Alex. E. Brown, Charles W. Bingham, S. H. Curtiss, J. F. Holloway, Ambrose Swasey, Thos. Kilpatrick, and S. W. Sessions. Judge Williamson was chosen President, and Mr. Thos. H. White Vice-President. Mr. Newton M. Anderson, who had been up to that time Instructor in Physics at the Cleveland Central High School, and who had organized and conducted the little school in carpentry on Kennard street, above mentioned, was elected Principal of the Manual Training School.

The important questions of the location of the school and the plans for a building were vigorously canvassed by the Directors. The present site, on the north side of East Prospect street, west of the C. & P. Railroad crossing, was finally determined upon. Work upon the school building was pushed as rapidly as possible, and the building was completed, equipped, and ready for occupancy before the end of January, 1886.

THE SCHOOL IS OPENED.

The school was opened for pupils early in February. The opening exercises were held on the evening of February 9th, in the assembly room of the Central High School. Valuable addresses on the subject of "Manual Training in Education" were delivered by President Hinsdale, Superintendent of the city schools, and Colonel Augustus Jacobson, of Chicago, who inspired the founding of the Chicago Manual Training School. From Col. Jacobson's memorable address the following extract is taken:

"Yankee ingenuity is proverbial. The Yankee has been made ingenious by the adverse circumstances under which he has existed. The main circumstance which has tended to make the Yankee ingenious, is that whenever he has wanted anything, he himself has had to make it, or go without it. As the Yankee has wanted a great many things, he has learned to make a great many things, and thus he has become very ingenious. The adverse circumstances under which each man had to make every thing for himself have disappeared from this country. Instead of them has come the manual training school, which is a complete set of improved adverse Yankee circumstances for training the young into intelligence and ingenuity."

The school building was opened to the public for inspection upon the evening of these addresses, and public exhibitions, enabling visitors to see the pupils actually at work, and also the results of the work, have been held from time to time.

The vacancy in the Board of Directors, caused by the removal of Mr. Kilpatrick from the city, has been filled by the election of Mr. J. H. Webster. With this exception, the present Board is the same as that first chosen.

BUILDING AND EQUIPMENT.

The school property is located upon East Prospect street. The lot has a frontage of 145 feet. Upon this has been erected a three story brick building having a front of 54 feet on East Prospect street and a depth of 90 feet.

Upon the first floor is the machine shop, 35 by 40 feet; the forge shop, 35 by 48 feet; the boiler room, wash room and office. The second floor contains the drawing room, 32 by 35 feet; the wood turning shop, 35 by 56 feet, also store room, coat room and reading room. The third floor contains a class room, 32 by 35 feet; one 16 by 16; carpenter shop, 35 by 56 feet; store room and coat room.

The machine shop has not received its full equipment, but will have lathes, planers, drills, bench vises and grindstone. In the forge shop are twenty forges, anvils and sets of tools. The wood turning shops contain twenty-one speed lathes with sixty-three sets of carpenter and turning tools. The carpenter shop is equipped with twenty-three benches and sixty-nine sets of tools.

In the carpenter and wood turning shops each boy has a set of edge tools which he keeps under lock and key and for the condition of which he is responsible. All of the tools are of the best quality.

The power used is supplied by a fifty horse power engine made by the Straight Line Engine Company of Syracuse, New York.

Further information in regard to the school may be obtained from the Principal.

METHOD OF INSTRUCTION.

The pupils all pass through the same course, which is progressively arranged, so that each department may be considered a preparation for the next. The pupil begins with the simplest tools and work, and passes by degrees to the more complex and difficult. The aim in each department is not to teach the boy to construct any special object, but to make such pieces as will enable him to master as quickly as possible the different processes. That the knowledge thus attained may be utilized in the construction of finished articles, is made amply evident in another part of this paper.

THE TOOLS.

At the outset the boy is placed in the carpenter shop, a room 56 by 35 feet, in which are twenty-three carpenters' benches, so arranged that each pupil has plenty of light and space. The benches are equipped with vises, stops, and tool racks. Upon the tool racks of each bench are a rip saw, cross-cut saw, back saw, hammer, mallet, large steel square, try square, bevel gauge, mortising gauge, foot rule, dividers, hand screw, screw driver, awl and chalk line, oil stone and oil can. These tools belong to the bench, and are used by the one working thereat. The lower part of the bench is divided into three compartments, each of which contains a set of edge tools, consisting of jack plane, smooth plane, block plane, and set of chisels. *All tools are of the best quality.* The classes are divided into three divisions, working at different times. One of the compartments is assigned to each pupil: Each compartment is provided with lock and key, and the tools in it are considered the property of the pupil using it during the term he is at work in that shop, He is responsible for the tools and their condition. The pupils are taught to grind their own tools. The instructor's bench is so placed as to allow space for the class to assemble in front of it. Here the instructor calls the class together, explains the construction and use of each tool and the methods of laying out work, and instructs them in regard to the selection of wood, its shrinking, warping, and checking.

THE LESSONS.

During the time the boys are at work at the benches the instructor goes from one to the other, giving them personal instruction. At first the boys are taught the use of the cross-cut and rip saws. With chalk line and square they mark off strips and then saw them, until they can use the saw fairly well, after which they use the jack plane, and then the smoothing plane. The first piece the pupil is required to make in a block of given dimensions, *which must be* perfectly flat on each face with all the angles right angles. This board is used in making a bench hook. Working drawings of each piece are made for the pupils to work from. The second piece of the course is a box 8 by 6 by 4 inches.

After completing the box in a manner satisfactory to the instructor, the pupil makes a square mitre joint. This piece is laid out with square and bevel gauge and made with saw and plane without using a mitre box. Then follow halved joints, open and closed mortise and tenon, open and blind dowel pin, dove-tail and glue joints, and panel making.

In all of these exercises great care is used to impress upon the minds of the pupils the necessity of accuracy in their work. Each piece is marked by the instructor in the presence of the pupil. In the marking the greatest value is given to the dimensions, then joints and angles, and then finish. The set of pieces above described was made last term, but the work may be changed from term to term as improvements suggest themselves. Some of the boys working much faster than the others finish the regular work before the end of the term, in which case they are allowed to make anything they wish, provided they do the work in a proper manner. Quite a large number of very good pieces have been made in this way, a list of which may be seen in another part of the circular.

The work in this shop occupies the pupil two afternoons of each week, each ssssion lasting three hours. At the beginning of the second term the pupils pass to

THE TURNING AND PATTERN SHOP.

In this, which is also 56 by 35 feet, are 21 benches similar to those in the carpenter shop, and arranged with the ordinary tools upon the tool board, and the edged tools in the compartments below.

The tools are the same as those in the first shop with the addition of those necessary for turning. The extra tools are two pair of calipers and nine chisels and gouges. The instructor's bench and lathe are so arranged that the class may assemble in front of them and receive instruction in a body, after which the instructor gives his attention to each pupil at his bench and lathe. At first the pupil is allowed to use only the large gouge. With this tool he is taught to make cylinders, cones, and then curved pieces, after which he makes a set of handles for the other chisels.

When the pupil can handle the large gouge well he is taught the use of the chisel in both straight and curved work, then takes up the other tools in succession until the use of each is understood. The work then turns to pattern making. The patterns are for pipe tees, elbows, cone pulleys, etc. As each pattern is finished it is molded in the presence of the class in order that they may understand why it is constructed in the manner taught.

This completes the work in wood and the first year. The pupil enters the second year and takes up his work in

THE FORGE SHOP.

The forge shop is upon the ground floor and is 48 by 35 feet and contains 20 forges and anvils, with water boxes, coal boxes and tools for each forge. The blast is supplied from a blower driven by the engine. The result of the training of hand and eye due to the year at wood work and drawing becomes very apparent in this shop. In the carpenter shop the pupil may take his time and measure his piece frequently as he goes on with his work, and it is necessary for him to watch but the one tool with which he is working. He need not trust his eye but may use his square frequently enough to be sure that he is right. The eye, however, does receive training from this work. In the turning shop the pupil must watch the lathe and revolving wood as well as the tool in his hand, and the inconvenience of stopping the lathe frequently, obliges him to use and trust his eye. Thus he comes into the forge shop somewhat prepared for the work. Here, he cannot stay and measure after every blow of the hammer, but must work rapidly while his iron is hot. He must know beforehand just what he is going to do when he takes the iron out of the fire, must have the form he is to make well impressed on his mind, and must trust to his eye to tell him when the result is attained. In order to avoid the confusion which would result if the boy tried to manage the fire and hot iron at first, he is required to work lead into forms similar to those which he afterwards makes of iron. In this way he has nothing to watch but his hammer and soon becomes familiar with it and learns to strike the spot he intends. The following set of pieces have been made by each of the class during the present term. Drawing round iron to square, octagon and round; staples, upsetting, hinge eye, S wrench, eye bolt hook, bending square corner, scarf weld, open ring, welded ring, welded flat ring, welded angle, welded T, chain, hook, diamond grab hook, steel punch fagot weld, grapple hook, tongs welded machinery steel, butt weld, cold chisels, cape chisels, center punch, welded tool steel, scarf welded tool steel and iron, V welded tool steel and iron, four lathe tools, lathe dog and carving knife.

The pupils are also taught how to temper the tools they have made.

THE BOYS.

The interest which the boys take in the shop school is very great. That more than four-fifths of the pupils asked permission to work in the shops during the vacation at Thanksgiving and nearly as many at Christmas, is sufficient proof of this statement.

The boys are allowed almost perfect freedom of deportment. This is considered necessary as the pupils attend academic schools from 9 a. m. to 2 p. m., during which time it is necessary for them to keep perfectly quiet. At first some do not know how to take care of themselves and their time, but it is gratifying to see that after a short time they go to work of their own accord and work very faithfully.

VERDICT OF PUBLIC SCHOOL TEACHERS.

The influence upon the general character of the pupils is well shown by the following letters:

CLEVELAND, OHIO, *June* 7, 1886.

Principal of the Cleveland Manual Training School:

DEAR SIR: I am glad to state that the attendance upon the part of the High School pupils at the Manual Training School has proved beneficial to their work in the High School.

By having pleasant and profitable employment a certain number of hours each week, these pupils acquire a new interest in their studies. They are fully sustaining their former rank in scholarship, and more. I believe also that there is a great gain in the matter of discipline. The influence of your school upon the morality of these pupils is certainly very commendable.

Yours, truly,

M. S. CAMPBELL,
Principal of the Central High School.

CLEVELAND, OHIO, *June* 7, 1886.

Principal of the Cleveland Manual Training School:

DEAR SIR: A mutual friend and public educator asked me the other day what the influence of the Manual Training School was upon the High School pupils who attended it. I told him—and the same may encourage you—that it was beneficial in many ways. Many of the boys are in my classses and I find them among the best prepared always, and always the most practical. I certainly think discipline is easier from the influence of that school. May you continue to prosper in your work.

Cordially yours,

EDWARD L. HARRIS,
Instructor in Mathematics, Central High School.

OBJECTS MADE.

The following articles were made by the pupils during the last year in addition to the regular pieces of the course:

Book shelves, Alfred Austrian; screen door, Frank Casterline; mariner's compass, Ernest Cobb; center table, Robert Corlett; hat rack, J. Milton Dyer; center table, J. Milton Dyer; book shelves, Ed. Flint; pastry screen, Fred Fuller; milk stool, Andrew Jennings; book shelves, William Jennings; foot stool, Fred Mason; easel, Harry Mather; Indian clubs, George Olmstead; ball bats, George Olmstead; foot stool, Dickinson Parsons; easel, Fred Schrader; book shelves, Horace Stilson; picture frame, William Watson; cabinet, Rolla Watson; picture frame, John M. Wilcox; screen door, William Yost.

RESULTS.

The habit of working from drawings and to nice measurements has given the students a confidence in themselves altogether new. This is shown in the readiness with which they undertake the execution of small commissions in behalf of the school, and the handiness which they display at home. In fact, the increased usefulness of the students still in school is making itself felt, and in several instances the result has been the offer of business positions too tempting to be rejected. This drawback, if it can be called one, the school must always suffer. The better educated and trained our students become, the stronger will be the temptation offered to them outside, and the more difficult it will be for us to hold them through the course. Parents and guardians should avoid the bad policy of injuring the prospects of a promising young man by grasping a small present pecuniary advantage at the cost of far greater rewards in the future. From the testimony of parents the physical, intellectual, and moral effect of the school is exceedingly satisfactory.

Board of Directors.

S. E. Williamson, President.
Thomas H. White, Vice-President.
J. H. Webster, Treasurer.
William E. Cushing, Secretary.

E. P. Williams.
J. F. Holloway.
Ambrose Swasey.
Alex. E. Brown.
L. E. Holden.
J. H. McBride.
Samuel Mather.
Stiles H. Curtis.
Charles W. Bingham.
S. W. Sessions.
Newton M. Anderson.

INSTRUCTORS.

Newton M. Anderson, Principal, Instructor in Drawing.
William C. Skinner, Instructor in Woodwork.
David Roche, Instructor in Forging.
Rolla B. Watson, Assistant in Woodwork.

In addition to the articles quoted this circular contains voluminous extracts from the catalogue of the Saint Louis Manual Training School, and an article on the general value of Manual Training, either written by, or inspired by, Professor Woodward; there is also a list of students, and programmes of the courses of study, which last have been already given.

The latest circular is dated June, 1887. From this the following list is taken:

Board of Directors.

S. E. Williamson, President.
Dr. D. B. Smith, Vice-President.
J. H. Webster, Treasurer.
William E. Cushing, Secretary.

E. P. Williams.
Peter Zucker.
J. H. McBride.
B. D. Babcock.
Samuel Mather.
Dr. J. A. Gilbert.
Ambrose Swasey.
Z. M. Hubbell.
I. P. Lamson.
L. W. Day.
Newton M. Anderson.

Newton M. Anderson, Principal.

MANUAL TRAINING DISCUSSED IN CITY BOARD OF EDUCATION.

The following extracts from the report of the discussion concerning the Manual Training School, which took place in the Board of Education February 28, 1887, are taken from the Cleveland Plain Dealer of March 1. In an able editorial on "The Manual Training Bill" the action of the Board was endorsed and the passage of the Bill by the Legislature earnestly urged:

"The subject of uniting the manual training school with the public school system was taken up and the report on the subject written by Mr. Zucker, chairman of the committee on judiciary."

This report declares that, "after a careful consideration of the entire subject, the committee has come to the conclusion that the union of the manual training school with the public schools would be productive of the highest good to our school system and pupils." They also conclude that legislation similar to that enacted in the cases of Toledo and Cincinnati is required, and proceed to state the form of the necessary legislation in detail. The Plain Dealer's report of the Board meeting proceeds as follows:

PRACTICAL TRAINING FOR BOYS AND GIRLS IN THE PUBLIC SCHOOLS.

The training school was represented at the meeting by Mr. McBride, Mr. N. M. Anderson, the teacher, and Mr. E. P. Williams, and they were invited within the railing.

Mr. Zucker spoke at some length upon the benefits to be derived from the manual training school. The pupils in the high school who are taking instruction in the manual training school, he said, are the brightest and the most vivacious, and they are taught to respect labor.

Mr. Monroe asked if one-fifth of a mill would be enough. Mr. Zucker said it would be for the boys of the public schools, who would be admitted free, with a charge, perhaps, for the material used, and this charge could be easily managed under the rules by which the board furnishes books for indigent pupils.

Mr. Williams said there was one feature which it would be well to understand. The object of the school is to give the youth such instruction in the use of tools as the public schools do not give. "We believed," said he, "the time would come when you would see how you could take hold of the matter, although we thought you were not ready for it then, but generous men took up the work. If we had one hundred scholars the school would be self-sustaining, but the question presented itself, How are we going to take care of the boys who cannot afford to pay the tuition? And we thought you could make this experiment, and if it does not meet with success you will not have gone so far into it but that at any time it could be dropped." Mr. Williams read the names of the contributors to the school, the list comprising some of the most prominent men of the city.

President Schellentrager called Dr. Smith to the chair and spoke in favor of the manual training school. He said he visited the school and felt that no one could go there and not come away favorably impressed. Besides the benefits derived it inculcates a love for labor, something which the American youth is in need of. The idea is a new one in America, he said, but has been thoroughly tried in Europe.

HOW IT AFFECTS THE BOYS.

"From the standpoint of a teacher I desire to call attention to one thing," said Mr. Anderson, "and that is the development of the natural aptitude of the boys.

The boys in the public schools have no opportunity to discover whether they are capable of making good mechanics. There are several boys in the school who had no idea when they went in a year ago that they could ever work with tools, but now they can do something wonderful for the length of time they have been there, and one of the assistants is a young man whose parents laughed at the idea of him ever being able to work with tools when he entered the school. Our discipline is not strict. We started in with the idea of not putting much restraint upon the boys, but giving them considerable freedom. As a consequence, the boys, at first, were as regular as at any school, but they soon discovered that there was little restraint, and some thought they would go away when they wanted to. Two boys came around one day and said they guessed they would not work. I said "all right," but they hung around and soon had their coats off and were at work. The boys are allowed to whistle, sing, and go from one part of the room to another, but they are generally carried back there by some question about their work, and they generally stay there after that."

THE CLAIM FOR THE GIRLS.

"I have listened to the list of names as contributors to the manual training school," said Mr. Fenton, "and I think the members need have no fear that these gentlemen are in a financial difficulty and want this board to help them out, but they think that the school may not have proper recognition and proper growth in any other way. I have visited the school and I am a great admirer of it, but I have always had some doubt as to where it should be hitched on to our public schools. That, however, can easily be overcome. There is one objection, however, and that is the going before the legislature and asking for authority to make a levy for a school solely for boys. If we ask the legislature for such a tax I think it would be unconstitutional, and it ought to be. There is greater need for a domestic and industrial school for girls than there is for a manual training school. Boys can always find something to do, but girls cannot.

"We read in Public Opinion that a competent statistician has estimated that ignorant cooking and bad management in the providing of food waste $500,000,000 every year for the people of the United States. It would pay to give the girls who are going to do the cooking for the next generation of working men a better start in life. If we make a levy of one-fifth of a mill we will realize about $16,000, and I think we should expend at least half of it on the domestic training school for girls which has been formed in this city by some young ladies, and the remainder can be devoted to the manual training school, and I am heartily in favor of it."

"I think the gentleman's remarks are timely," said Mr. Schellentrager, "but waste in cooking is nothing compared to the improperly cooked food. That causes sickness and death."

"In Toledo," said Mr. Anderson, "the girls have a department in the manual training school, where they are taught to cook and cut garments."

Mr. Hubbell said the training school should be for both sexes.

Mr. Zucker was of a contrary mind, because he thought a manual training school may be established on the West Side, if the plan is successful on the East Side, and all the money obtainable by the levy might thus be needed.

It was decided to change the bill so that it should read "manual and domestic training schools," and the board voted favorably upon the proposition. The bill asking for the levy will therefore be sent to the legislature, and Mr. Zucker and the gentlemen representing the manual training school want to find Senator Eggers to present the matter to him and urge that the bill be passed before the legislature adjourns.

It will be observed that the need of the girls for some forms of industrial training, which is as great elsewhere as in Cleveland, was not overlooked. In the same issue of the paper, over the signature "F. C. L.," is the following urgent plea for some form of industrial training in the lower grade schools.

As the discussion in the Board and this letter, both relate to topics which are of interest to all who may take the subject of Manual Training in Public Schools into consideration, it has seemed fitting to include them in this statement:

MANUAL TRAINING IN THE GRAMMAR SCHOOLS.

It is proposed to add manual training to the high school. Only about one-third of the boys who graduate from the grammar schools enter the high school, and they are those who expect to follow some profession.

The two-thirds remaining will follow avocations such as the instruction of the manual training school is intended to aid. Too much of our knowledge has come from mistakes in practice. There are rules and systems in all branches of work, and to know these is to be swift and exact in execution. We cannot begin too young in the schools to train the head and the eye. The kindergarten is a good beginning, and to carry its principles of construction into the grammar school would be an easy matter.

The expense could be made very light by introducing, as Superintendent Dwight of Boston did, the white holly and black walnut and simply an engraving tool and saw. Four hours each week given to each child in instruction would be of great benefit if followed by practice at home, and most parents would be delighted to see the practical use their children were making of their education, and would, when necessary, supply them with boards and tools for a work bench.

What shall we do with our boys? will no longer be the first thought of the mother, for a boy employed is a very useful member of the family. Long before the age of fourteen, when the majority graduate from the grammar school, and the time of the boy is considered of value to the parents, the home will be scanned to see where he can put in his saw to advantage. He will not only make towel racks and foot stools, but he will see where the steps of the weary mother may be shortened by a door cut through an inside wall, or a floor raised to save a step up and down, or a window made to let in sunshine, or a walk made to save dirt, or a porch for a hammock. Innumerable are the things that a boy untrammeled by usage and stimulated by praise will attempt to do.

Do let us have this source of useful and innocent amusement opened to our children of the grammar schools.

Do not speak of the increased expense, for are we not taking from the support of the dram shop, jails and reformatories, and we will need less in these departments when idleness and lassitude are supplanted with diligence and enjoyment. This is an opportunity to cultivate in Americans a love for the home, and it has not come a moment too soon. Surely we do not wish to follow the example of the old world that divides its families into hospitals and orphanages. The love of parent and child should be strengthened and not broken.

CHAPTER XIX.

THE ADOPTION OF TECHNICAL MANUAL TRAINING BY THE AUTHORITIES OF GIRARD COLLEGE.

Purpose of the wise Philanthropist in founding his great charity — To raise up a class of industrious, orderly citizens — Increasing difficulty in apprenticing the boys to industries, due to changes in social customs and conditions — As these boys are of the age and class of the majority of public school pupils, the experience of this College is of value to Public School officials — The purpose of the Trust stated in the Annual Report for 1881 — Number of boys that have been in the College to date — Expenses of the College — Interest in Technical industrial education — Efforts of Directors to get best information about the new education — The experiment begun in a small way in 1882 — Large increase in number of boys — Mr. Girard's will quoted as to the studies to be taught — The results of the first year of industrial training so well approved that in 1883 the facilities for such teaching are to be greatly enlarged — Testimony to excellent character of the graduates in after life — In the Report for 1884 the Directors enlarge on the importance of Manual Training and recall that as far back as in 1848 increased attention to Mechanical education was urged by some far-sighted Directors — President Runkle of Massachusetts Institute of Technology credited with early adoption of the Russian ideas as shown at the Centennial — The development of the plan in this college related — Tribute to the authorities of Spring Garden Institute — Methods of instruction given in detail in Report for the year 1885 — This College affords unusual advantages for thoroughly testing the value of this industrial education because the pupils remain there from the age of six to that of eighteen years. In the Report for 1886 the statement is made that the demand for the boys who have been trained in this new method exceeds the supply, while before technical industrial training was begun, it was very difficult to find places for the boys. The verdict of the Girard College authorities is emphatically in favor of the new education.

INTRODUCTORY.

In the chapters immediately preceding this, the subject of Industrial Training has been treated in its direct relation to the public schools and the public school system.

In the present chapter, the history of the introduction and development of a progressive course of definite industrial training in Girard College, Philadelphia, as officially set forth in the Annual Reports of the City Board of Directors, who exercise supervision over that magnificent charity, is given.

This institution was founded by the will of the late Stephen Girard who came to this country a poor boy and who, by the exercise of industry, thrift, economy, and remarkable business capacity, became well known in Philadelphia as trader, merchant engaged in foreign commerce, banker, and capitalist during the early part of the nineteenth century.

His shrewd, homely common sense was recognized, and his extraordinary money-getting faculty, but this was thought to have degenerated into an over desire for accumulation, and it was not until it was revealed by the publication of his "last will and testament" that the noble purpose which had inspired his accumulations was suspected by his fellow citizens, when, at last, this man, whom they had mistakenly deemed a miser, stood revealed to the world as a great-hearted, far-seeing philanthropist.

WHAT STEPHEN GIRARD SOUGHT TO DO.

It was for promoting the instruction and well-being of a class of industrious mechanics that Stephen Girard designed the Institution which bears his name. He sought to save the orphan boys of Philadelphia from the dangers to which they were especially exposed, and to train up a race of industrious, intelligent, orderly citizens.

The changes that have taken place in social conditions throughout the country, and especially in all industries, have rendered it more and more difficult for those charged with the execution of his wishes to accomplish them satisfactorily.

As the causes that affect them are general, and as the boys under their care are of similar ages, and, in all respects, save in their loss of parents, closely resemble the boys who attend the public schools, the experience of those in charge of them is calculated to be worth the consideration of all who have to do with the public schools; for which reason the following quotations from the six annual Reports of the Board of Directors, beginning with that for the year 1881, in which the account of the beginning and progress of the experiment is set down at length, are here given.

As the opening paragraphs of the first report* quoted set forth the purpose of the Trust and show what had been accomplished in the execution by the authorities of the duties it imposed, these are given here.

The Twelfth Annual Report of the Directors of City Trusts.

To the Legislature of the State of Pennsylvania, the Councils of the City of Philadelphia, and the Board of Appointment comprising the Judges of the Court of Common Pleas for the City and County of Philadelphia:

The Board of Directors of City Trusts, in pursuance with the requirements of the Act of Assembly vesting them with authority, present their Twelfth Annual Report ending December 31, 1881.

After providing that the Rents, Issues, and Profits of his Real Estate in Pennsylvania shall be applied towards improving the Real Estate situated in the City and

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*Twelfth Annual Report of the Board of Directors of City Trusts. Report for the year 1881. Philadelphia: January, 1882. Pp. 121.

Liberties of Philadelphia, by erecting new buildings thereon, the first and primary beneficial object set forth in the will of Stephen Girard is that the whole of the income of his estate shall be applied to the improvement and maintenance of a Permanent College, with the view of providing a better education and more comfortable maintenance for such a number of poor, white, male Orphan Children as can be trained within the limits of one institution, than they usually receive from the application of the public funds. The forty-five acres, now diminished to forty acres by the encroachment of streets upon which the improvements and arrangements of this Orphan Establishment are made, are those prescribed for that purpose by the will and codicils.

Since the opening of the College 2,547 Orphan Boys have been admitted, and the great majority of those who have passed through its course have become useful citizens, many attaining highly honorable positions among their fellow citizens.

The Orphans in the College January 1, 1881, were		865
Admitted during the year		102
		967
Indentured, left the College at 18 years of age, or discharged	88	
Died	1	
		89
Remaining January 1, 1882		878

The expenses of maintaining the College, including the salaries of all officers, teachers, governesses, instructors, prefects, servants, etc., together with the cost of supplies of clothing for the boys, household equipment and food for all the inmates in 1881, amounted to $255,735.50.

The net receipts of income from Real Estate within the city were $175,445.06; from Stocks, Loans, etc., $77,281.83.

The usual care has been exercised in keeping the dwelling houses, stores and wharves of the Estate in good order.

These include two hundred and forty buildings, which are let at various rates from $225 to $18,000 per annum, all of which are insured in amounts varying from $800 to $75,000 on perpetual or seven years' policies.

Further details of the properties follow, after which is the statement of the condition of the College at that time, in which it is apparent that the question of providing some form of technical industrial training in the College itself had become a pressing one, owing to the increasing difficulties met with in attempting to secure places for the boys as indentured apprentices.

THE CONDITION OF THE COLLEGE IN 1881.

The Discipline and Instruction of the Orphans have been carefully supervised, bearing in mind the desire of Mr. Girard to instil into their minds the purest principles of morality, for the inculcation of which the Bible is selected as the true, clear and perfect foundation.

The establishment for Instruction now consists of thirty permanent schools, with thirty-one able professors and teachers, with additional visiting instructors in Elocution, Music, Phonography, and Elementary Drawing.

Gymnastics and Tactics have also their special teachers as useful recreative arts.

The course of studies is from time to time printed in the appendix to the Reports.

Much thought has been given to the subject of Technical Education. The schools of Paris have been thrice visited by members of the Board, to observe the practical working of the system, and the chairman of the committee specially appointed to inquire into the subject has been in frequent correspondence with experts in relation thereto.

The Directors find themselves much embarrassed in carrying out Mr. Girard's instructions as to apprenticeship. Comparatively few persons are now found willing to assume the responsibility required, with but little control of the indentured, and with other obstacles in the way of their learning the mechanic arts.

The only remedy seems to be to give the pupils mechanical knowledge and skill within the College as part of their daily routine.

It is believed by many that the European plan of Technical Education can be introduced with very great advantage. The legal objections have been submitted to the solicitor, who has given his opinion that the experiment is permissible, and it is confidently hoped that the New Year will not pass by without an earnest effort to verify its usefulness by the test of experience in the Girard College.

The following extracts from the Thirteenth Annual Report (for 1882) record the commencement of the experiment:

Early in January, 1882, an appropriation was made for the purposes of mechanical instruction. Workshops were fitted up in the basement of No. 7, and Mr. T. Mason Mitchell was employed to superintend the work in the new school. From one hundred and fifty to two hundred boys, divided into five classes, have been receiving daily instruction, each class being with their instructor for about six hours in each week. Everything in relation to the introduction of the work, and its progress and discipline, seems to have been well arranged and without appreciable interference with the usual course of study. Great interest has been manifested by the pupils in all that they do, the work at vises and work-benches being so attractive and engaging to their minds that there has been up to this time no instance of a boy reported for idleness or misconduct in the workshops.

Some of the work is exceedingly creditable, and a specimen of the results of individual labor has already been found a sufficient evidence of capacity to procure ready employment at fair wages in a mechanical trade.

At the suggestion of the Board the Superintendent of the workshops visited the School of Technology in Boston, the Stevens' Institute at Hoboken, and the Cooper Institute, New York. Valuable assistance has also been received from examination of the teaching in the Spring Garden Institute.

In the opening sentence of this Report the Board state that the administration of the College and of its funds "constitute the most important part of the trusts committed to their charge."

In the Fourteenth Annual Report (for 1883) the Directors say:

The Girard College work for the past year has had for its object the preservation of an educational system, which experience had proved to work well, while incorporating therewith a greater number of pupils, now double the number originally taken charge of, and so to classify them that without injury being done we might continue new enterprises for the general good and more certainly secure to our pupils the means of making an honorable livelihood in the outset of their worldly career.

To this end the Board, which in 1870 was divided into seven standing Committees, is now divided into eleven, each one of which is charged with an amount of labor fully equal to that of an ordinary Board of Directors.

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THE OBJECTS OF THE TRUST AS SET FORTH BY MR. GIRARD.

Mr. Girard at first set aside five acres or less for college purposes, naming three hundred as the minimum number of orphans he expected that space to accommodate. He then, by a codicil, allotted forty-five acres for those purposes, now reduced by encroachments conceded for the benefit of the city to forty acres. So that when income is sufficient, and the management works in perfect harmony in all its parts, the extent of enlargement which it is the duty of Trustees to aim at, appears to resolve itself into a simple question of arithmetic.

The exactness of the will is likewise perceived in the provision that the orphans "shall be instructed in reading, writing, grammar, arithmetic, geography, navigation, surveying, practical mathematics, astronomy, natural, chemical and experimental philosophy, the French and Spanish languages," "with such other learning as their capacities may merit," and also in the expressed desire that "they shall be taught facts and things rather than words and signs," while pupils must leave the college between fourteen and eighteen years of age. To comply rigidly with these requirements and give the boys a basis of sound strength, morally and mentally, whilst seeking by close observation to lead them to those fields of useful work to which their capacities are best adapted, has been our aim.

The gratifying experiment in mechanical teaching last year has induced the Board, when compelled by the worn out condition of the steam boilers after the use of many years, to provide new boilers and a boiler house with increased steam power for the purposes of cooking, heating, washing and ventilation, etc., and to connect therewith as a matter of advantage and economy, a building for the purposes of mechanical instruction in metals and woods.

The need of the building is well set forth in the following condensed extracts from a report to the Board:

"Heretofore, the boys have only been instructed in metal working. This, an experiment undertaken with great caution and on a small scale, in deference to the misgivings of some members of the Board, and with the experience of one or two failures in the same direction has, we are happy to report, from its inception, in April, 1882, to this time, continued to give such entire satisfaction, has proved so useful and attractive to the pupils, and has helped us so materially in securing occupation for no less than thirty of our boys in first-class mechanical establishments where, instead of having to learn the most rudimentary branches they are at once recognized as useful workmen and paid accordingly, that we feel encouraged to recommend to the Board that the instruction now confined to metal work, such as filing to line, sawing and filing, known as template work, fitting, dove-tailing, chamfering, chipping and sawing, free hand filing with hand vise, etc., be extended to wood work in its various branches."

We have before referred to the importance of extending mechanical instruction to be given to boys, to wood work. Heretofore, the work has been confined to iron and steel alone, and in seeking employment our lads are restricted to this kind of work. We think it advisable and strenuously recommend to the Board to extend the teaching to the using of tools in wood. We see no reason why this character of instruction should not be equally successfully taught, and the demand for wood workers is almost as great as for workers in metals. While free hand drawing is admirably taught in the College, there is little time or opportunity for mechanical drawing, which is so important to the skilled mechanic. We advise that this be made part of mechanical instruction, etc.

No attempt has been made to teach the pupils any distinct trade, except perhaps a few boys of remarkable natural ability for mechanics; in view of the early age at which they are compelled to leave the College this would be impossible.

They are taught the use of tools, and how to handle them in the workshop, as they are taught to read, write and cipher in the school rooms; the one course enabling them to become clerks, bookkeepers, conveyancers, the other, machinists, furniture-makers, blacksmiths, cabinet-makers, locksmiths, and to obtain employment in kindred trades.

The Instructor also reports, "that he has in view the adoption of plans whereby illuminated objects of machinery, embracing a much wider scope of explanation, may be introduced with much advantage, which will familiarize the boys with what they will meet with in mechanical business. A pause is frequently made, when the attention of classes is called to the elucidation of points bearing upon particular stages of their work, and whilst general attention is given there have come back to us expressions of thanks from those who are testing the knowledge thus obtained in their daily work of life."

* * * The number of orphans in the College on the 31st December, 1883, was 1,105.

The number of boys admitted since 1848 up to 31st December, 1883, is 3,057. * * *

In closing that part of our report that relates to the affairs of the Girard College and the strict terms of the will which govern us, it would not be right to create the idea that we feel hampered thereby; the views of the generous testator serve rather as an incentive to surmount obstacles and fulfill his wish as a royal law to give in the broadest sense "dignity to labor"—passing over the avoidance of what might have been the condition of the poor orphans left to themselves, with no eye to pity, which is the negative merit of Mr. Girard's benefaction, we turn with pride and satisfaction to much public testimony of good work, well performed and rarely marred by pupils of the College. They now form a large body of able, influential men—"By their fruits ye shall know them"—and we may here claim as an indisputable fact that the City, whose wards they have been, has not unfrequently been indebted, as we trust it often will be, to their integrity and energy for the purity of its administration and enforcement of its laws.

In the Fifteenth Annual Report (for 1884) the Board say:

GIRARD COLLEGE.

The condition of the College has been satisfactory during the year. The conduct of the boys has been, as a rule, orderly, and they have made fair progress, both in their literary and mechanical schools.

One hundred and forty-three pupils were admitted during the year; four died; thirty-four were indentured to various occupations; the indentures of sixty-six were cancelled for satisfactory reasons; and twelve were discharged for malconduct, having become, in the language of Mr. Girard's will, "unfit companions for the rest."

The number in the institution is eleven hundred and thirty-two. Of those admitted in 1884, all were born in the old city of Philadelphia, or in other parts of Pennsylvania. None were admitted during the year from any other State. As under the provisions of the will a preference is given first to boys born in Philadelphia, and second to those born in other parts of the State of Pennsylvania, few boys have ever obtained entrance from any other State, as more apply annually from Pennsylvania than can be admitted. A few were admitted in 1877 from New York, which is next on the list of admission, but these are no longer in the College.

The applications for admission continue in excess of the capacity to receive. Four hundred and forty-three applications are now on file, awaiting vacancies. * * *.

TECHNICAL INSTRUCTION FORESHADOWED.

The most important subject occupying the attention of the Directors during the year, has been that of technical instruction. Very soon after the organization of the College the great importance of more instruction for the boys in the use of tools became apparent. In 1848, a committee of the then Board of Directors, of which Mr. William J. Duane, who prepared Mr. Girard's will, and the accomplished Henry D. Gilpin were members, recommended, in the strongest language, some mechanical instruction, but from some cause no satisfactory teaching was then introduced.

Soon after the creation of the present Board, the Executive Committee, in April, 1873, through Mr. William Welsh, its chairman, recommended that the trades of manufacturing paper boxes and tinware should be taught, but this was not adopted.

In 1876 the Centennial Exhibition gathered into its brilliant focus many of the results reached by the best thinkers and most practical men of the civilized world; among them, a simple method of teaching the rudiments of practical mechanics to boys, which seems to have been thought out by Russian instructors, and has become popularly known as the "Russian plan." One of the first to appreciate and utilize this system was the President of the Institute of Technology in Boston, Mr. John D. Runkle. He introduced it into that institution, and on the invitation of Mr. Welsh, the President of our Board, in the Fall of 1877, in a lecture at the Franklin Institute, demonstrated its simplicity and practicability to an audience, among whom were some of our members.

It was not, however, until the year 1881, after great deliberation and an elaborate report from a special committee, that the Board, carefully considering *three* plans suggested to them: *First*, establishing machine shops in connection with the school; *second*, a large establishment, with various tools and appliances suitable to many trades, with competent instructors in each branch; *third*, elementary instruction only; not to teach a trade nor secure a product, but to train the pupil in the use of tools—*instruction, not construction;* in fact, the Russian system—adopted the last, as not only the most economical, but best adapted to introduction into the College; the first two plans being not only expensive, but, in the opinion of some members of the Board, not in accordance with the scheme of instruction prescribed by Mr. Girard for the education of his beneficiaries.

TECHNICAL INSTRUCTION BEGUN.

Early in the spring of 1882, mechanical instruction was begun. Even then, however, only tentatively, and in the single branch of metal working. This trial was so satisfactory that in 1883 an appropriation was made for erecting a commodious and properly constructed building for a greater variety of technical teaching. This school building, placed in the northwest part of the College grounds, is 55 feet wide by 155 feet in length, two stories high, and compares in its details of construction with the best models of workshops of this character.

The building was finished in December, 1884, and formally opened, with appropriate ceremonies, on the 9th of that month. Before the building was completed, elementary instruction in wood work was introduced, which promises to be as successful as metal working has proved.

The Board have expressed their approval of teaching mechanical drawing in connection with the instruction in the use of tools, as soon as the committee having the general supervision of this department shall be prepared to submit a proper plan; this not to lessen nor encroach on time now devoted to the equally important branch of free hand drawing, which has for many years been admirably taught in the College by Professor Becker.

OTHER SCHOOLS INVESTIGATED.

While the Technical School was being built, some of the members of the Committee on Technical Instruction, Messrs. Mann, Gates, Wagner, Caven, and Drayton, accompanied by the Mayor of the City, the President of Common Councils, and Mr. James H. Windrim, the Architect of the Trust, visited and inspected the system of teaching in the construction of the work shops and machinery of the Stevens Institute at Hoboken, the Adler Institute in New York, and the Institute of Technology in Boston. The Committee were politely assisted in their investigation by the officers of each of these institutions, but finding the machinery, the arrangement of the work shops and work-benches of the Institute of Technology in Boston most nearly what they were seeking, drawings and measurements of many of these were made by Mr. Windrim, aided in every way by Professor Runkle, who gave up his whole time to the committee while in Boston.

THE EXPERIMENT IN SUCCESSFUL PROGRESS.

About two hundred and fifty boys are now under instruction in the use of tools with metal and wood. Mr. T. Mason Mitchell, the Superintendent of Technical Work, makes satisfactory reports as to the diligence, order and progress of the pupils. The school rooms are furnished with the necessary implements and equipments for teaching the use of tools. Though wood work has only been taught a few months, a decided preference of one branch over the other is already shown by some of the boys. As soon as the boys are able to understand their uses, instruments for testing the exactness of their work are placed in their hands and they are taught how to use them. To do this carefully and precisely calls for the most persistent and patient efforts from the Instructor.

It is only a just tribute to the Spring Garden Institute of Philadelphia to say that the intelligent manufacturers and practical mechanics who manage it, and from whom we have had much help, adopted this Russian system, or one quite similar, several years before it was introduced into the College, incorporating it, however, with more advanced teaching than our Board has felt to this time warranted to undertake.

Phonography, introduced into the College in 1880, continues to be successfully taught. Some of our boys who have been instructed at the College have secured profitable employment, one at a salary of $30 a month within six months after leaving College. Type-writing is also taught to such boys as display an aptitude for it. Its introduction is so recent that nothing can be said of it, experimentally, but the increasing demand for experts in this art seems to promise another opening for the employment of our orphans who leave the College to struggle for a living.

The Sixteenth Annual Report (for 1885) gives a very interesting statement in detail of the educational training given to the boys, and the Board congratulate themselves upon having been led to introduce Manual Training. These results form a very emphatic indorsement of the practical value of this definite industrial training.

One hundred and fifteen pupils were admitted during the year. Seventeen boys were indentured and eighty-seven had their College indentures cancelled. The necessity for cancelling indentures becomes greater each year, in order that our older boys may obtain remunerative employment from persons who are willing to take them and pay reasonable wages, but who are not willing to be responsible for, or to be burdened with, apprentices.

The number of pupils now in the College is eleven hundred and thirty-five—the greatest number ever reported. Since December 27, 1847, when the College was opened, there have been admitted three thousand three hundred and sixteen (3,316) boys. In spite, however, of constantly increasing accommodations these cannot keep pace with the number of applicants. There are now four hundred and thirty-four boys waiting admission; all except three from our own State.

Anxious to introduce as many children as the grounds will accommodate and the income of the Estate warrant, the Committee having special charge of this department, recently, in an elaborate report, estimated the greatest possible number at any time, at two thousand boys. This limit, however, cannot be reached for years, unless the income should increase more rapidly than we anticipate. To add as many as our means now permit, new buildings are in process of erection, into which will be introduced every appliance for the best sanitary results in plumbing, heating and ventilation. The corridors and stairways will be fire-proof, and the buildings provided with balconies and connecting bridge-ways between them, securing ready escape in case of danger.

Boys are admitted to the College between the ages of six and ten years. None older than ten can be received. At eighteen they must leave the College.

THE STUDIES TAUGHT.

The course of study to be pursued during that period of a possible twelve years, has always been a subject of solicitude and watchfulness to the Committee having this special department in charge, who modify the same as new branches meet their approval and improved methods become obvious.

The youngest and least advanced pupils are taught the alphabet, then reading, spelling, writing, drawing, arithmetic and object lessons, these last embracing colors, forms, surfaces, and solids, and common objects and their uses. Then, as they grow older, natural history, geography, grammar and etymology, the history of our own country and Great Britain thoroughly; then modern history generally, and, lastly, that of the ancients. The higher classes, reviewing several of these studies, are also carefully taught etymology, as roots and their derivatives; the construction of words; then analysis and parsing; and as soon as the boys are fairly advanced in these last two branches, composition is taught thoroughly by competent instructors.

In the higher departments, mathematics, including surveying and navigation, graphics, book-keeping, natural and experimental philosophy and chemistry, and the French and Spanish languages, are taught, in accordance with the will of Mr. Girard.

TECHNICAL INDUSTRIAL INSTRUCTION A SUCCESS.

We have every reason to be satisfied with our success in mechanical instruction. As we reported last year, the experiment begun in 1882 was so gratifying that after an experience of a little more than a year, on a small and inexpensive scale, it was determined to increase the number of branches to be taught. On the 9th of December, 1884, more extensive workshops having been provided, teaching the use of tools on wood-work was introduced, and this has been again supplemented by the erection of a suitable building for a smith shop and foundry, in which branches the pupils are also instructed. Mechanical and geometrical drawing are now taught likewise. It is not our intention to extend this branch of instruction any farther, unless so directed by the light of experience. We believe that all of these are necessary to equip a lad to go out from the College and take his place among the young mechanics of our country. While each study is taught to every pupil old enough to handle tools, careful supervision by the master soon discovers the particular branch in which each seems to display most capacity; to which, after he has gone through the whole curriculum, he will be permitted to devote most of his attention during the residue of his stay in the College.

METHODS OF INDUSTRIAL INSTRUCTION.

The plan of instruction proposed to accomplish this end, is to commence with the draughting room, where the beginner will be required to make a drawing of some simple article, or piece of machinery, which he will then take to the wood-working and turning department and work out as a model for the foundry, where he will be taught to cast it in metal. From the foundry he will take his casting to the metal bench, and there complete it for the purpose of its design. This finished, he will begin again with some more complicated piece of work in the draughting room, going through the same routine again and again until, draughtsman, wood-worker, turner, forger and skilled worker in metal, he either goes out into the world competent to earn his living at least in some one of these employments; or if, in the judgment of the Superintendent, the lad, still under eighteen years of age, is sufficiently instructed in each branch, and shows a preference for one, and has not yet found a suitable place, he may be permitted to make himself more perfect in that one which he prefers.

THE IMMEDIATE VALUE OF THIS TRAINING DEMONSTRATED.

Our introduction of this mechanical instruction seems almost providential, in view of the scarceness of apprenticeships. Up to almost the end of the year 1884 metal work alone was taught, and during that year only about one-third of the boys who left College entered into mechanical pursuits; of those who left during 1885, and since instruction in ordinary wood work and turning has been introduced, two-thirds have obtained work in mechanical operations.

Since the employment of a Superintendent of Admission and Indenture, he has diligently inquired as to the conduct of the boys who have left the College and who are engaged in various pursuits. He informs us that in our annual report for 1884, there were on the list of apprentices (less thirty-three indentured in 1884), two hundred and three (203) names; of these, fifty-two have come of age, eleven could not be traced, and four have died, but of the one hundred and thirty-six whom he found, one hundred and twenty were employed, and but sixteen were unemployed, and of these employed not one was unfavorably spoken of by his employer. Of the ninety-eight who left in 1884, eighty-six are employed, and ten are not working, but of all these, he has made diligent inquiry, and while of eighty-seven he has had the most favorable report, he has learned nothing to the discredit of the remaining nine who are alive: two have died. We doubt if many colleges in this, or any country, can present so gratifying a result of their moral training.

In the Seventeenth Annual Report (for 1886) the Board continue to show increasing appreciation of the value of the new studies; they seem to have found a way to place their boys who go out from the Manual Training School, in employment at once; and, since Manual Training has been taught, the increase in the relative numbers of those who now enter mechanical employments, as compared with those who went from the college before, is very noticeable.

The results obtained in Girard College are valuable and worthy the study of all educators, because they show what can be done with this definite Industrial training when it is begun and continued through an uninterrupted course. The experiment can be more fairly and thoroughly conducted in this institution than elsewhere, and the system is entitled to be judged by the results thus obtained. The public schools, and the private Manual Training Schools, may approximate, more or less closely, to these favorable conditions; but it is not often that whole classes of youth can be kept continually under one educational control from the ages of six to eighteen. This element of permanence gives to the authorities of Girard College very great advantages in any educational experiments.

The following statements are from the latest Report: that for the year 1886:*

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*Seventeenth Annual Report of the Board of Directors of City Trusts. Report for the year 1886. Philadelphia. 1887. Pp. 120.

GIRARD COLLEGE.

As the establishment and prosperity of his College was the great desire of Mr. Girard's heart, so from its magnitude and importance it occupies most of our time and attention.

To maintain discipline, watch over the health and provide properly for the comfort of a community of sixteen hundred and ninety people, thirteen hundred and eighty of whom are children, requires great attention, from the President of the College to the youngest prefect and governess. We are happy to bear testimony to the fidelity with which all duties have been performed in every department during the past year.

While every reasonable indulgence and recreation are afforded to our pupils, profiting by experience, our officials watch for and check at once any attempt at insubordination. No better evidence of careful supervision can be afforded than that of the number of boys whom we are compelled to expel, as expulsion is only resorted to when mild means of reformation prove abortive. To compare one year with the preceding scarcely affords a test, but a comparison of decades is reasonably conclusive. During the ten years from 1867 to 1876 inclusive, when there was but an average of 532 boys, 91 boys were expelled; from 1877 to 1886 inclusive, when the average reached 1,009 boys, 75 were expelled. While then, in the first decade, one boy in every 58 was expelled, in the second only one in 133 was expelled.

With so many orphan boys under our charge, whose sole inheritance from their dead fathers has been feeble constitutions, naturally one of our chief cares is their health. To this end we adopt every intelligent precaution against the germs of disease. During the past year we invited Colonel Waring, the well-known sanitary expert, to inspect our system of drainage, culverts, and cesspools. Under his advice, as soon as the weather permits, some changes which he recommends will be made.

The Board being satisfied that the financial condition of the Girard Trust warranted the admission of an additional number of boys (a building for that purpose, commenced in 1885, having been completed in December of this year), two hundred more boys have been admitted, making the whole number who can now be accommodated, thirteen hundred and eighty. Unless some unexpected financial disturbance should temporarily reduce our city rental or our revenues from the coal lands, we purpose soon to make arrangements to receive two hundred more boys.

The building just completed, and called No. 9, is located west of No. 8, and is 116 feet front by 190 feet deep. Its plan is a series of pavilions from a central hall, the pavilions forming the section rooms and dormitories, with offices, linen-rooms, etc. The building is three stories high, with an attic over the front section for domestics. The corridors and stairways are fire-proof, and there are exterior balconies and bridgeways, providing ready means of egress in case of fire. The exterior is of white marble, with blue-marble trimmings, and in architectural design, applied Gothic, corresponding with No. 8 building. As there are no furnaces or fire-places in the building, it being heated by steam from the general boiler service which heats all the buildings on the grounds and is at a distance from No. 9, a conflagration is scarcely possible. Every appliance for the best sanitary results in the matter of heating, ventilation, and plumbing has been introduced.

GRATIFYING RESULTS OF INDUSTRIAL INSTRUCTION.

The progress of the boys in their studies is highly gratifying. Every branch indicated by Mr. Girard is taught; and although six hours a week of the thirty-two heretofore devoted to study are now spent in the mechanical shops, we find that owing to the change of pursuit the boys get through as much work and as well in twenty-six hours as they did formerly in thirty-two.

We are glad to report that our mechanical school gives us every encouragement to continue and improve the plan of study adopted last year.

METHODS FOLLOWED IN INDUSTRIAL INSTRUCTION.

Under the present course each individual pupil first makes a drawing of a piece of machinery, to be finally perfected in the metal-working department; this drawing he takes to the wood and turning room, where he works out his model in wood; this he casts at the foundry in metal, whence he takes it to the metal bench, where, under supervision, he completes it according to the original design. He then takes up something more advanced, which he again completes. Hence, while the boy learns no special trade, he becomes proficient in drawing plans and handling the tools used in carpentering, forging, foundry work, and metal working, and is unwearied by the monotony of repetition.

INCREASING DEMAND FOR BOYS SO TRAINED.

This method has produced good results, having not only rendered our boys able to earn a support often before completing the College course, but has relieved us, to a great extent, from having to seek places for them as apprentices. Formerly such situations being often unattainable, we were obliged, under the Will, to send them out of the College at the end of their term, to struggle for a support for which they were imperfectly prepared. But now we have more applications for boys than we can supply, and a lad must be very dull or negligent for whom a good place can not be found, at living wages, before he reaches the end of his term, and this, notwithstanding the number of boys who have left the College this year is greater than ever before, exceeding that of last year by more than 50 per cent., yet of the 163 boys who have gone out only one was 18 years old. Before this branch of instruction was introduced, not more than one-third of those who left entered into mechanical pursuits. Last year 57 per cent. did so, while this year the percentage was 65.

OTHER GOOD RESULTS.

The President of the College, speaking in his report of the marked improvement in the conduct of the boys during their recitations, largely attributes it to the influence of our Manual Training Department, where, he says, "in addition to the education of the hand and eye," which a lad receives in this department, he has the benefit of a certain amount of physical exercise which improves his health, clears his brain, and puts him in a better frame of mind for all the school tasks and school restrictions."

GIRARD COLLEGE.

BOARD OF DIRECTORS OF CITY TRUSTS, 1887.

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Mr. T. MASON MITCHELL.

Seven assistant instructors are in charge of the divisions of this department.

The full list of the Faculty and Teachers numbers fifty-five. Thirty-seven of these are ladies. In addition, the "Household" officials number thirty-seven.

CHAPTER XX.

AN EDUCATIONAL EXPERIMENT "THE FREE KINDERGARTEN AND WORKINGMAN'S SCHOOL," FOUNDED UNDER THE AUSPICES OF THE SOCIETY FOR ETHICAL CULTURE, IN NEW YORK CITY.

Sources of information — Reference to the theories advanced by Prof. Felix Adler, Director of these schools — Official publications — Address by Professor Adler, before the Society for Ethical Culture, concerning the Workingman's School — Article by Professor Adler on "The New Experiment" in the Princeton Review — Origin and purpose of the experiment — The Society of Ethical Culture — Professor Adler the successor of the Rev. O. B. Frothingham, in charge of the society and congregation — The schools aided by many benevolent people of all creeds — The Free Kindergarten opened for the children of the poor in 1878 — The Workingman's School, a development of The Kindergarten, opened two years later — The two schools, which, after several removals, now occupy their own building at No. 109 West Fifty-fourth Street, New York City, are now in charge of a society organized for the purpose, and known as "The United Relief Works of the Society for Ethical Culture" — These schools claim to furnish a continuous education to the child from the age of three to fourteen years — The Kindergarten course for children from three to six years of age — The Workingman's School continues the kind of teaching, developing, as the child grows, up to the age of fourteen — Evening classes to be provided for older pupils — The Director's report transmitting three reports of the Principal of the Free Kindergarten — Warm Luncheons provided daily for the Kindergarten children by the Ladies' Association — Interesting details of the opening and progress of the Kindergarten given in the first report by the Principal. To organize a model school, and to evolve a practical method of organizing schools for children, from infancy to manhood, was the avowed purpose of this experiment — Noble statements of high ideals of education, made from time to time, by Professor Adler — His suggestions as to desirable changes in the courses and methods of study in the elementary public schools — Plea for drawing and manual training — Morals taught without prejudice to religious beliefs — Value of this demonstration of a *modus vivendi* for school children of all denominations — The Princeton Review article by Professor Adler — Extracts from this article — Reports by the Director and Principal of the Workingman's School for 1882 — Theories of education set forth — Methods of instruction in accordance with the theories illustrated — The "Creative Method" — Statement of the progressive courses in drawing and elementary industrial work as taught in 1887 — List of officers of the Society and of Instructors in the School in 1882. List of officers and instructors, 1888–89.

INTRODUCTION.

Frequent reference has been made in the present volume to the theories set forth by Prof. Felix Adler, and to the experimental schools established by the Society of Ethical Culture of New York City, over which he presides.

The account of these schools would have been given in connection with those of the several educational experiments recited in Chapter XVII, but that it was hoped to secure fuller and later information as to the present condition of the schools than was then at hand.

Letters of inquiry addressed to the present Principal of the school remaining long unanswered, I am restricted to the material at hand; mostly contained in two pamphlets published by the Society, the first, in 1881, giving the address of Professor Adler before the Ethical Society in 1880, reciting the opening of the Workingman's School, and also the reports of the "Free Kindergarten," which had then been in operation some three years, and of the Workingman's School, which was opened a few months before the date of this report by the Principal, in which the plan of the school, as proposed, is set forth in detail.

The other pamphlet contains the second and third annual reports of the Workingman's School; also, an article by Professor Adler, reprinted from the Princeton Review of March, 1883, in which his theory as to Industrial Education is set forth; the two antagonistic meanings attached to the term Industrial Education are distinctly stated, and a plea made for what he terms the "Creative Method;" indicating, thereby, those methods of training which develop the varied abilities and character of the child,—both as an individual and as a member of human society,—instead of those methods which simply pour knowledge into his mind as into an empty receptacle; or, if industrial training is given, simply teach certain restricted movements applicable to certain definite industries. In this article Professor Adler constantly illustrates his positions by references to the Free Kindergarten and to the Workingman's School, established and supported by The Society for Ethical Culture.

Both pamphlets* contain the programmes of the drawing and industrial courses with each lesson illustrated. These contributions to the present discussion are eminently worthy the study of all interested in the movement for the introduction of some form of industrial art training, as well as elementary training in industries, in the public schools. More than this, they can hardly fail to interest all who, though not especially interested in, or intelligent concerning, methods of education, are painfully impressed and profoundly moved by the needs of the rapidly increasing numbers of the neglected children of poverty, in our ever-growing American cities. While in this aspect they appeal to philanthropic citizens, it is in the relation borne by these experiments to the threatening social and labor problems of the near future that this thoughtful attempt to find a practicable solution of the perplexing difficulties that as surely menace society in America as in the older countries, though not yet to the same extent, becomes of interest to the student of social problems.

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*The Workingman's School and Free Kindergarten, supported by the United Relief Works of the Society for Ethical Culture, an Address by Prof. Felix Adler. Reports of the School and Kindergarten. The School and Kindergarten are situated at 1521 Broadway (corner Forty-fifth Street). Lehmaier & Bro. Print, 95 and 97 Fulton Street, New York. Pp. 58.

The Second and Third Annual Reports of the Workingman's School, conducted under the auspices of the United Relief Works of the Society for Ethical Culture, 109 West Fifty-fourth Street, New York. January, 1881 – January, 1883. Pp. 94.

On the other hand, the special students of educational methods and their relation to society can hardly afford to ignore these statements of the results of actual experience in the application of definite scientific methods to the training of children. To each of these classes the perusal of these pamphlets may be commended.

The value of these experiments consists in the fact that they are made for the purpose of discovering a system of educational training reaching from the earliest years of the child's school life to the time when the child is ready to take a place among the workers in the world as a well-equipped helpful human being.

Whether so designed from the first, or not, the higher school grew out of the Kindergarten, and the friends of the two schools seem confident that they have evolved a working scheme of education suitable for very general application. Such a claim, so authoritatively put forth, merits serious consideration.

THE SOCIETY FOR ETHICAL CULTURE.

The Society for Ethical Culture, now presided over by Professor Felix Adler, is the successor of the congregation which, first gathered in New York City under the ministry of the Rev. O. B. Frothingham, was a collection of exceptionally liberal-minded people.

The "Free Kindergarten" for poor children, and confined to poor children, was opened early in January, 1878, in rooms in West Forty-fifth Street.

The Kindergarten School was removed in October, 1879, to the premises of the Ethical Society at No. 1521 Broadway, corner of Forty-fifth Street. The Workingman's School, in connection with and as a continuation of the Free Kindergarten, was opened in the new rooms in February, 1880. The pressure of pupils compelled another removal, and the Society, assisted by many benevolent friends, prominent among whom was the late Mr. Joseph Seligman, was able to put up a building of its own, especially planned for the uses of these schools, at No. 109 West Fifty-fourth Street, which it now occupies. Miss Fanny E. Schwedler was the first principal of the Free Kindergarten. The schools are open to all, without regard to the race or religion of the parents. The schools are supported by a separate society, organized for that purpose, membership to which is secured by a subscription of any amount. This was at first known as "The Society for the Support of the Workingman's School and Free Kindergarten," and is now known as "The United Relief Works of the Society for Ethical Culture." The names of more than two hundred members of this society are printed in the first pamphlet. There are also thirty life members—payment of $100 constitutes a life member. The late Mr. Seligman contributed $10,000 to the Endowment Fund, and this gift made possible the opening of the Workingman's School and the erection of the present school building.

In the first of these pamphlets the following statement precedes the report of the Director upon the Free Kindergarten:

> The Workingman's School and Free Kindergarten form one institution. The children are admitted at the age of three to the Kindergarten. They are graduated from it at six, and enter the Workingman's School. They remain in the School till they are thirteen or fourteen years of age. Thereafter those who show decided ability receive higher technical instruction. For the others, who leave the School proper and are sent to work, a series of evening classes will be opened, in which their industrial and general education will be continued in various directions. This graduate course of the Workingman's School is intended to extend up to the eighteenth or twenty-first year.
>
> From the third year up to manhood and womanhood,—such is the scope embraced by the purposes of our Institution!

REPORT OF THE FREE KINDERGARTEN.

DIRECTOR'S REPORT.

To the Board of Trustees and Members of the United Relief Works, etc.:

I have the honor to transmit to you herewith the reports of the Principal of the Kindergarten for the years 1878 and 1879. The characteristics of our Free Kindergarten may be briefly summarized as follows:

It is a *Kindergarten.* It has the merits which belong to the Kindergarten system generally. It is a *Free Kindergarten* for the poor; that is, it brings Kindergarten education to the poorest class, who are not able to pay for it themselves. It has the negative advantage of taking little children from the streets, where they would otherwise be exposed to bad companionship and pernicious influences of every kind. If it accomplished nothing more than this, our Kindergarten would be rendering no little service. But it has also the positive merit of placing the poor children under the best educational influence which modern times have devised. It is, moreover, the first step in a *rational system of education.* Kindergartens exist in great number. But a very large part of their benefits is lost, because the rational method which they begin is not followed up in the later education of the child. That our Kindergarten is connected with and followed by a Workingman's School is one of its characteristics upon which I lay especial stress. Of other features of the Kindergarten, I mention the following:

THE NORMAL CLASS.

It has a *Normal Class* attached to it. This was founded by and is in charge of the Principal. The lady pupils of the Normal Class receive instruction gratis in the theory and art of Kindergartning. In return, they devote their service for a year to the Kindergarten, and assist in its practical management. We have thus every year a corps of eight or nine Assistant-Kindergartners supplied to us by the Normal Class.

THE LADIES' COMMITTEE.

The Kindergarten has a *Ladies' Committee*, directly concerned in the care of it. The ladies are members of the general Executive Committee, but they exercise especial watchfulness over the pupils of the Kindergarten. It is their duty to visit the home of every applicant for admission, in order that we may be sure that only the really poor are taken into our Institution, and we may thus be protected against imposture. The ladies also undertake at least one annual visitation of all the families connected with the Kindergarten, in order to foster healthful relations between the home and school.

Warm Luncheons are provided for the children daily in the Kindergarten. The little children often came to us hungry. We found it difficult to give them instruction on an empty stomach. A Free Kindergarten for the poor must look to the bodily wants of its pupils as well as to their minds. Garments and shoes are also distributed among the children by the Ladies' Committee, whenever cases of great destitution, such as often occur, are reported.

INFLUENCE ON THE PUPILS.

The results already achieved by our Kindergarten work are satisfactory. Children came to us who could not smile; some of them remained for weeks in the Kindergarten before they were seen to smile. In the Kindergarten these sad little faces were gradually changed. The children were taught how to play; they learned how to be joyous. The children came to us unclean in every way: in the Kindergarten they are made clean, and a neat appearance and habits of tidiness are insisted upon. The children's minds were awakened: their faculties—physical and intellectual—were developed. And here, of course, the degree of success achieved in each individual case varied with the natural ability of the pupils. But of all, a powerful moral influence has been brought to bear on the children of the Kindergarten. Even the fact that they live in a little children's community, and are compelled to submit to the laws of that community, is important. Then, too, direct moral suasion is brought to bear upon the children by their teachers. The faults of each child are studied; obstinacy is checked, selfishness is put to the blush, and, by a firm, yet mild treatment, the character is improved.

ACKNOWLEDGMENTS.

In the prosecution of our work we have become greatly indebted to individuals, for whose aid and co-operation it is a pleasure and a duty to express our thanks. Our Free Kindergarten owes a great deal to its Principal; owes so much to her, that it never would have become what it is without her great and praiseworthy devotion to her work. The Assistant-Kindergartners and the pupils of the Normal Class, who have been with us during the past three years, also deserve our appreciative mention.

We have been placed under conspicuous obligation to Dr. Adolph Douai, Mrs. Schmidt Douai, Miss Luther, and the late Director Stahl, for the service which they rendered as a committee to superintend the examinations of the Normal Class. We owe them thanks for the readiness with which they undertook their labors, and for the encouragement which their testimony has given to our undertaking.

We owe a word of sincere recognition also to the band of thirty lady volunteers who have in charge the giving of the luncheons to our pupils. Six of these ladies are, by turn, present in the Kindergarten daily, between twelve and one o'clock. Welcome to the teachers, whom they allow an hour of much-needed intermission, they are eagerly hailed by the keen appetites of the children.

In conclusion, permit me to express the hope that the Free Kindergarten will continue to enjoy that good-will and favor which have hitherto been so warmly accorded to it by its friends, and, without which, it can neither grow nor exist.

On behalf of the Executive Committee,

FELIX ADLER.

Three reports by the Principal of the Free Kindergarten followed, dated, respectively, May, 1878, May, 1879, and January 1, 1881. These all show the growth and prosperity of the school and recount the various movings. The first report is here given in full, as it contains a very interesting description of the first beginnings of the experiment:

FIRST REPORT BY THE PRINCIPAL OF THE FREE KINDERGARTEN.

*To the Chairman of the Committee on Schools of the Society for Ethical Culture.**

In compliance with your request, I have the honor to submit the following report of the Free Kindergarten:

On the morning of the second of January, 1878, the Kindergarten was opened in the National Assembly Rooms, West Forty-fourth Street, with an attendance of eight pupils. Many were the difficulties that hampered the new undertaking at its inception. In the first place, the intentions of those whose munificence permitted the work to begin were distrusted. It seemed difficult for the people of the poverty-stricken district in the midst of which we were located, to believe that purely disinterested motives should have impelled men to take upon themselves the burden and expense of a new educational institute. Most absurd ulterior designs were accordingly suspected. Thus, it was given out that the purpose of the school was to kidnap the children. Moreover, a sewing school, which had existed some years previously in the same vicinity, had left behind an evil impression, and the recollection of this induced the little community, among whom we began our labors, to observe the greatest caution in entrusting their children to our charge. With eight children, however—six strong boys and two of the larger girls—they were willing to hazard the attempt, and, if it proved satisfactory, the smaller and weaker children were to follow. The eight little ones accordingly—like dots they seemed in our large hall—were duly seated, and the singing and instruction commenced. The exercises of the first morning consisted of singing, drawing, and weaving None of the children had the courage that morning to join in the singing, but all, with only a single exception, tried to draw and weave to the best of their ability. It must be remembered to the credit of these little savages that none of them had ever been subjected to any serious restraint, and the patience with which they plied their unaccustomed tasks was truly astonishing. Hitherto, they could run or stay as they pleased, and their liberty to have their own way was seldom interfered with. The parents, indeed, fretted by work or ill-humor, would sometimes make their authority felt severely enough, upon some unfortunate provocation, and then the blows would rain down regardless of entreaties and cries. Having left such homes as these, it was indeed a new experience for the children to have their elders speak and sing to them, and treat them at once with firmness and kindness. It was the beginning, that morning, of a higher and more ideal life, which dawned upon them and kept them charmed. When at last noon came they were allowed to go home to their luncheons. But few took time to eat, and they returned with eager faces, anxious to see what the afternoon would have in store for them. They also brought two new pupils, whom they introduced with the words, "These are the two new ones."

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* The Free Kindergarten was founded by the Society for Ethical Culture. After being in successful operation for two years, the Kindergarten, together with the Workingman's School and the District Nursing Department, were separately incorporated under the name of The United Relief Works of the Society for Ethical Culture. This step was taken in order to give those an opportunity to join us in philanthropy who do not agree with our radical principles in religion.

ENTHUSIASM OF THE CHILDREN.

Never was Gospel more enthusiastically received than was this Kindergarten by the children. One child told another what lovely toys they had, and what sweet songs were taught them, giving such descriptions, that there was great curiosity among all the children in the neighborhood to see for themselves; and they began to flock in, in large numbers. And so the number has steadily increased, until now the hall no longer looks desolate, but is bright with many merry faces, and alive with ringing, merry voices. One little girl says she feels very happy that there are so many "nice days" in the week. The boys think their Kindergarten is as precious as tops, and it forms the main topic of their conversation at home. All these stray bits of news the mothers and fathers delight to bear to us. They are thankful for the care shown to their children, and do not cease to manifest their pleasure and surprise that there should be those who take a personal interest in the affairs of the poorer class, and labor to show them what a blessing labor was intended to be.

THE PARENTS APPROVED.

Now that the people have given us a trial, the sneers of some have changed to respect and civility. The entire neighborhood takes an interest in our Kindergarten. The people come in occasionally, admiring our hall, our pictures of animals, our benches, our tables, with the net-work of squares spread over the surface. They ask numberless questions, as to the use of the material, and are especially astonished to see how the wildest and most unruly children are brought to love discipline. Indeed, the moral training which it gives is one of the most important features of the Kindergarten. The children, when they come to us, usually struggle for their own sweet wills; but all, with the exception of three or four, have been won over to the observance of certain rules, and have been made to feel that these rules have been given for the welfare of the little community. In this way they are taught to consider the happiness of others, and the roots of egotism are thus early extirpated from their hearts. A great blessing is thus secured. The children must treat one another as equals in this little world in which they move; and that prepares them for the larger world, and fits them for later duties. The Kindergarten training will also eventually simplify their studies as they grow up, by teaching them early to observe, to think, and to work. All possible freedom is at the same time accorded to the individual children, and the originality of each is sedulously protected and developed. It seems almost superfluous to assure the public that when we attempt to convey moral influence, we strictly abstain from any attempt at religious teaching. Respect for the diversity of belief existing among the parents of our pupils would alone command such a course. It is enough for us that the child be filled with a joyous trust in the good, and be initiated betimes into the practice of virtue: with the doctrine and theories we are not concerned.

THE LOVE OF NATURE INCULCATED.

But among all the objects which the Kindergarten seeks to achieve, it is of capital importance to instil a love of Nature in the young souls. Observance of all of Nature's work the Kindergarten seeks to develop by means of games. In these games the children are taught to imitate the motions of birds, fishes and various animals, describing their actions at the same time in song. Thus, in one game which is at present being taught in the Kindergarten, one of the children flies like a bird; another imitates a lamb; still another a man; a fourth is a rose-bush; others represent a pond; and all the rest are trees, moving their outstretched arms to and fro for branches. The little lamb skips about and sings of how lovely the sun shines, the water sparkles, the birds sing, and the roses bloom. All the world is active and serviceable; and is there no way in which the lamb can be of service? Now it passes the rose-bush, and the thorns seize some of its wool. The lamb stops to ask the reason. The rose-bush sings in reply that the bird needs wool to stuff its nest. At the same moment the bird comes flying to take the wool, and sings thanks to the lamb. Presently the man walks about, speaking of the cold weather to come, and of his children, and what they will do without warm clothes, and begs the lamb for help. The lamb allows itself to be washed and sheared; and being thanked again, it skips about merrily as before, singing of the beauties which surround it, and of the happiness which it has been the means of conferring.

Thus the attention of the children is drawn to Nature, and at the same time they easily grasp the moral application of such games as this. Children are quick to perceive the analogies in the actions of animals, to their own; on the other hand, they delight to make animals and even inanimate objects talk and act as they themselves do. This well-known trait of character has often been confirmed of late among our pupils. Now that the weather is fine, a number of them are led off once a week for a walk in the Central Park. The new and closer attention they give to Nature is every time apparent. Every flower, every leaf, is greeted with delight. "Do you see those flowers," one little girl said to her smaller brother, pointing to a maple tree all in blossom, "when the birdies go out to take a nice long walk with their own mamma on Sunday, they can pick these flowers and make bouquets of them, and put them up all around their nest." "Oh, yes," said another, "and when it rains the birds have plenty of water to scrub, and they like to clean their houses." Children will see all things as you put them; aud it wholly remains with the parent and educator to develop the germs of evil or good. Let us trust that our Kindergarten may aid in fostering the good only, and let us hope that those who have taken so deep an interest in building it up, may find in the benefits it confers an acceptable reward.

FANNY E. SCHWEDLER.

MAY 15, 1878.

The second report states that investigation having satisfied the Ladi s' Committee of the Kindergarten that, owing to various causes, the little ones did not have sufficient food at their homes, a substantial luncheon was therefore given to them at the school each day, with excellent results. The intellectual and moral improvement of the pupils is also noted. The change resulting from the development of the Kindergarten, by the addition of a school for children over six years, is shown in the Third Report of the Principal of the "Free Kindergarten," which is addressed to the Director of the Workingman's School and Free Kindergarten, instead of, as formerly, to the Chairman of Committee, etc. The two schools are parts of one entity.

PROFESSOR ADLER DISCOURSES CONCERNING THE NEW SCHOOLS.

After the Workingman's School had been in operation for several months, Professor Adler made it the theme of "a discourse delivered before the Society for Ethical Culture, at Chickering Hall, New York City, October 24, 1880."

The philosophical ideas underlying this educational experiment are so frankly stated, and the purposes and hopes of the new movement in education so clearly set forth, as to make this address a notable contribution to the polemic literature of the day in matters relating to education. It is a high ideal of education which is here portrayed, and one of direct interest to the promoters and defenders of the American system of free, unsectarian public schools.

The noble statement of the high ideal, here set forth and illustrated, that mental, moral and manual culture are all within the province of education, is in shining contrast with the grudging concession, made by the enemies of free public schools, that the simplest elementary English studies only may be taught in them; or with the addition of the narrow limits of industrial training which are barely allowed by the self-termed "practical" people, who clamor so strenuously for the teaching of something directly useful and practical in the public schools.

In these schools supported by private benevolence, it is claimed that this high ideal is very successfully combined with an eminently practical education, adapted to the children of the poorest parents. If this claim endure the test of time, and the results are at all commensurate with the early indications as reported by its promoters, here is an experiment which should be carefully studied and tested by all who are entrusted with the direction of the system of public schools in the States and cities of the United States.

The details of the "Drawing and work instruction," as arranged for the eight years' course of the Workingman's School, by Mr. Bristol, who is in charge of that department, occupy some forty-five pages of the second pamphlet with one hundred and twenty-one exercises, most of which are illustrated. Ten additional pages contain fifty-six exercises in Mechanics and Physics. These courses comprise the whole system of instruction in these branches given in the regular course of the school. It is understood that eventually post-graduate courses will be given in evening classes, if desired.

In considering any such scheme of continuous training enunciated in advance of the experiment, it must be kept in mind that one most essential condition—as essential as the well-known prerequisite of first catching the hare, insisted on by the famous Mrs. Glass, of culinary renown, in prefacing her injunctions to the cook—namely, the continuance of any one child, or class of children, through the whole series of successive studies so logically and carefully graded from year to year, can never be guaranteed. Lacking these, the whole beautiful theoretical structure of the printed programmes is liable to a tumble as disastrous to its ordered symmetry, as a passing breath is to the child's house of cards.

It is owing to this brevity and uncertainty of attendance on the public schools, that many of the shortcomings of these schools, which are so freely criticised, are due.

CERTAIN STATISTICS DESIRABLE FOR COMPARISON.

It would be of great interest and value, in considering these schools under the patronage of the Ethical Society, to be able to see the statistics of attendance, and to know what proportion of the children attending the first year of the Kindergarten in 1878 were still in attendance in the Workingman's School in this year of 1888, and what proportion of the children entering the Workingman's School in its first year, were still in attendance. Until those facts can be compared with similar statistics of the public schools, no satisfactory conclusions as to the relative value of their methods of training nor of their relative success in securing continuous attendance, which is one of the strong claims put forward in favor of the new methods, can be reached. That the Kindergarten methods are valuable for the very young pupils, may be considered as generally admitted. That this plan of connecting the Kindergarten with the school that follows, and the continual progression of the manual training of the child, through each successive year of school life, thoroughly commends itself as a rational plan, may be conceded.

It would be of interest to know what the post-graduate courses are to consist of, and how the preparation of the actual worker is to be completed; where the connection is to come between school and workshop; between the pupil and the actual workman. These are the practical questions in which the directors of the free public schools of the country are interested, and these New York model schools, created by an association of private individuals—interesting as they may be in themselves—are of concern to the country at large, only so far as they may shed light on vexed questions of public school training. If the methods of training the child from the Kindergarten to the Manual Training School—that is, from the third to the fourteenth year of child life—have proven as successful in actual operation as the projectors of the school anticipated, then those problems of early education are solved; and these schools should be carefully and minutely studied by public school officials and educators generally. The present school year, 1888–89, is the first year in which a child entering the Kindergarten at three years of age could have reached the final year of the course in the Workingman's School.

The only data at my command later than the pamphlet containing the reports to January, 1883, consists of the concise *résumé* of the methods of the pupils' work in the various grades, furnished by the courtesy of Director Adler and Principal Bamberger, in January, 1887. It will interest American educators, and especially those connected with the direction of public school systems, to learn that the well-known educator, Dr. Andrew J. Rickoff, recently residing in Yonkers, New York, but formerly Superintendent of the public schools of the City of Cleveland, Ohio, has, within the past year, been called to the principalship of the Workingman's School. With the experience of this distinguished educator the co-ordination of the methods in use in the Workingman's School and methods practicable in the public schools may, it would seem, be effected; at any rate, the conclusions that Dr. Rickoff may reach as to the practicability and desirability of these methods for the public schools, after sufficient time has elapsed to justify his judgment, will be awaited with interest.

AN IMPORTANT EXPERIMENT IN TOLERATION.

Besides these Kindergarten and manual training phases, there is another experiment on trial in these schools, which, in the near future, may assume great importance. The attempt has here been seriously made to evolve a method of developing and instructing the moral nature of the child, without, in any way, offending or interfering with the religious or sectarian tenets of the parents. It is affirmed that the children of Agnostics, Infidels, Hebrews, Catholics, and Protestants are successfully taught the primal elements of character, such as truthfulness, integrity, respect for the rights of others, purity, temperance, in regard to which high-minded men of all religions, sects, and creeds, or holding any of the many phases of unbelief, are agreed.

THE RELATION OF THE FREE PUBLIC SCHOOLS TO AMERICAN LIBERTY.

In view of the general assault against the American system of public free schools, which to-day is so marked a movement of the Catholic Church throughout the United States, as shown by the erection of numberless Parochial school buildings, and the pressure put on their members to force them to withdraw their children from the public schools;—an attempt that is fraught with evil possibilities to the children of European emigrants, who, if thus segregated from their fellow countrymen during all their school life, are never as likely to become incorporate into the body politic and are, thereby, defrauded of the chief value of American citizenship;—this demonstration of a *modus vivendi* of the children of Catholics, Protestants, and others, in free public schools, becomes of prime importance. The claim of the Catholic Church that she is the only proper teacher of religion to the children of her votaries may be readily admitted; as may the like claim put forth by Hebrews, Mahometans, Buddhists, Agnostics, and the many sects of Protestant Christians.

"The public school is no place in which to teach religious tenets or creeds," say these advocates for church schools. In this the people seem to be agreed. "The churches should each teach the children of their members." In this the people are also agreed. But the corollary, that these sectaries would draw,—that, therefore, these separate organizations were each entitled to a pro rata share of the public school money in order to establish separate public schools, in which their several peculiar tenets should be taught the children,—will never be conceded by Americans who desire to preserve American Freedom ;—the priceless heritage of free thought and of untrammelled investigation, which is the crowning glory of Free America.

Let parents, priests, pastors, teachers, instruct their charges in these most sacred, highest truths, at such times and places as may be best suited to them. The free public schools, open to all children, regardless of the pecuniary or social condition, or of the religious and political beliefs of their parents, are, of right, unsectarian; and it would be an act of base robbery, however plausible the pretext, to divert any of the funds raised for these children of the people by public taxation, into other channels. Let the churches open their buildings to the children at such times as do not interfere with their attendance in the public schools, and let them give them such social and religious instruction as they deem best, but let their secular education be given, as now, in the free public schools; so will their religious beliefs be conserved as their believers desire, and so will all the apparent injustice of compelling the followers of any church to erect and support separate schools for the education of their children be done away with.

In the light of this experiment, the school founded by Director Adler and his coadjutors may assume national importance.

PROFESSOR ADLER'S ADDRESS.

In opening his address concerning the Workingman's School, Professor Adler refers to the difficulty of helping the poor, and the frequent failure of rendering any permanent service through the ordinary channels of charity. He also takes the ground that the present education of the children of the people is not satisfactory, enforcing this position not by his own assertions, but by quotations from an article by Charles Francis Adams, Jr., in the November, 1880, number of Harper's Magazine, in which it is complained that the science of pedagogy is wholly ignored and neglected by the colleges of the country.

Premising that it is not necessary to wait till all this has been changed before beginning the good work of giving right teaching to children, Professor Adler says:

> It seems to me that private persons of generous disposition ought to take hold of this matter in the first place; that the first thing to be done is to exhibit by one example what the right method of teaching is, and to show how superior its results are above those commonly achieved. This can be accomplished if a number of persons will, of their own motion—because the improvement of their fellow-men by education has their whole interest—guarantee the means necessary for the building up of a model school, in which the right method shall be illustrated, and if they will have a care that only the most competent teachers are employed in connection with it, one such school conducted in the right way will do more to change the evils of the existing system than the most earnest advocacy in other directions. The right example, when it has once been set, will be followed; and the persuasiveness of excellence will here, as in other instances, become apparent.

DESIRABLE CHANGES IN SCHOOL METHODS OF INSTRUCTION.

The next question that arises—after the persons have been found to start such a school (and happily they have been found; the lower classes of the school are now in operation, with one hundred and fifty scholars)—is, in what ought such a model school for the people to differ from the common schools as they now are? It ought to differ in many respects. It should teach history, for instance, in a better way. The aim of the lesson in history should not be to store the pupils' minds with dry facts, which are barely connected among themselves, and possess little attractiveness; it should not seek to fill the imagination of the pupils with pictures of bloody war, and the power and pomp of kings; it should not glorify the great slaughterers of their fellow-men, who have been misnamed heroes; nor should it nurture an exaggerated and foolish national pride among the young. But it should awaken in them, as far as possible, an intelligent sympathy with the life of the world, and the great phases through which humanity has passed in its struggle toward progress. To do this, the lessons in history must be alive and enlivening. The pupils' intense interest must first be secured. The rule should be here, as elsewhere: begin from the near and go on to the remote. Biographical narration should precede the study of history itself. The young children must first be interested in some great persons who lived in Greece, and some remarkable men who lived in Hindostan, and some illustrious men and women who lived in England and France, and Spain and Italy, before they will care to know about the countries in which those persons had their home, and about the people by whom they were surrounded, and about the vicissitudes of those peoples' history. From the wonderful story of the life of Socrates, to which every child listens with delight, it is easy to conduct the interest of the pupils to the story, or history, of that Athens in whose market-place Socrates dropped his words of wisdom, in whose streets and work shops he held his remarkable conversations, and where also his Xanthippe treated him so badly. In like manner, the life of Buddha will awaken an interest in Hindostan, the life of Peter the Great an interest in Russia, etc.

The study of geography should be treated in the same way, the rule here also being to proceed always from the near to the remote. The child should first be taught the geography, so to speak, of the house in which it dwells, of the garden around the house, of the street on which the house is situated, of the city which includes all the streets. From the city, the geographical lesson proceeds outward to the State, to the country, and then to other countries. The study of geography and history will mutually supplement each other and add each to the other's interest. The information which is given the pupil concerning places will become more attractive because of the knowledge of historical events which happened there and the distinguished persons who lived there. The knowledge of events and of the lives of persons, on the other hand, will become more real and more present to the pupil, because he knows the background on which these events appear—the very streets on which these personages walked.

He then suggests reform in methods of teaching English, and suggests that one must at least know the grammar of two languages, in order to talk well in one.

A knowledge of mathematics should be communicated in a more effective way than it now is, and our system of work instruction, of which more will be said further on, will be found peculiarly useful in this direction. Drawing should be taught in the youngest classes, and not left to an advanced grade, as it now often is. The taste of the pupils in reading should be watchfully cultivated, so that, though they be the children of poor men and women, they may in later life be able to enjoy the classics of the English language; and thus a great fountain of pure recreation may be open to them, of which they are now often unnecessarily deprived; and they may be protected against taking pleasure in vicious literature.

TEACHING NATURAL HISTORY.

A knowledge of the simpler facts of natural history should be communicated even in the lowest classes. The children's power of observation should be sharpened; and whenever it is possible, they should be brought face to face with the objects of nature themselves. There is here an open field of instruction which is too little cultivated in the schools. We complain of the dearth of happiness for the majority of human lives; we ought, at least, to utilize those means of happiness that are at hand. The book of nature offers many elevating lessons to those who are able to read its language; it were well worth while to make even the children of the poorer class proficient in understanding that beautiful language.

In all these respects, we do not claim to introduce what is novel in education; we simply follow where the best educators of Europe have long since pointed the way, and seek to give to children who are now educated by methods that are behind the age the benefits of such methods as are abreast of the progress of the age.*

In the setting forth of the value of that education of the hand which follows, there occur, in one or two of the opening sentences, statements which seem to indicate that even this liberal minded large hearted philanthropist, had not fully outgrown the Asian and European idea, that, of necessity, the children must follow the same lives as their parents. If this be so, one is tempted to ask, of what value will be this training you are to give these children of the poor in your schools? This idea is utterly un-American and long may it so continue. If Mr. Adler and his friends had really held this belief, as some of the opponents of the public schools profess to do, the Free Kindergarten and the Workingman's School would never have been begun! That the great majority of Americans must be workers is inevitable; but that the after life of the children must inevitably be passed in the employment or amid the surroundings, however degrading, of their parents, is, fortunately, not so! Later in his discourse, Mr. Adler says wise words regarding the ideas of equality. He shows how labor is ennobled by the thought given to it, and that service to others is not degrading, but is, on the contrary, honorable. His reasons for beginning this industrial education at an early age and continuing it all through the course up to manhood, are well worthy of consideration; especially is what he says in relation to the development of the art faculty of the child, to be heeded.

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*We may claim novelty, however, for the system of moral instruction for young children, apart from any reference to religious dogmas, which forms a part of the plan of our Workingman's School.

THE EDUCATION OF THE HAND.

Of the new manual training he says:

> But there is one main direction in which we believe we have to offer what is essentially new and what will constitute an epoch in education, if it be generally accepted. We mean the inclusion of hand education as an essential part of school education. I take it here for granted that free popular education ought to be especially adapted for the children of the poorer class, who are not able to provide the education suitable for their offspring themselves; for the children of the working people, who will be in their turn the working people of the future. I take it that public education ought especially to fit this class for their future station in life. And it is this class whose needs particularly appeal to the sympathy of the more fortunate, that we have had particularly in view in attempting to build up a model school. Now, if there is any one thing which the working people need, and which, therefore, the common welfare demands,—for the interest of the community at large and of the working people are most intimately bound up together,—it is that *greater dignity* shall attach to hand labor. There is no kind of work that does not become attractive when dignity attaches to it. Work of the hardest kind is performed every day by men of science, work which involves personal discomfort and the overcoming of physical disgust, and yet it is cheerfully done because of the intellectual dignity that elevates such work. Every physician renders, in his practice, menial and repulsive services, which no servant could be hired to render; and the physician, far from being disgraced, is ennobled by his service. In the same way, we believe that the tedious work of the working people could be rendered more easy to them, and even elevating, if greater dignity could be made to attach to it; if only more intellect could be put into it. And we look to hand education in the school as a means of accomplishing this desirable object. There are certain mental operations that underlie manual operations. These the children should be taught, so that their manual operations may become transparent to the mental operations that underlie them. In modern times, capable men have discovered that there is such a thing as a theory of tools; that tools can be classified and grouped, and that a child's mind can be led along in orderly succession in learning them. It has been shown that there are three great types of tools, involving three principles, by which, and the combinations of these principles, every kind of tool can be explained. There are reasons underlying manipulation; there is a reason why an axe should be wielded in a particular way, why an axe splits, and why a knife cuts wood. The double-cutting edge of a plane exhibits a rational contrivance, and has an interesting explanation of its own. The children ought to be taught these reasons, and made to understand these explanations, even while they use the saw, and wield the axe, and strike with the hammer, and move to and fro the plane.

THE RUSSIAN SYSTEM OF INDUSTRIAL TRAINING.

Later on, in a higher stage of industrial education, what is called the Russian system comes into play. The novelty and the importance of this system is that it is developed in a graded series of workshops, designed to serve educational purposes only; that the products of the young workman's labor are not salable articles, but in all cases typical forms, intended solely for the purpose of manual instruction. In each of these educational workshops there is a particular class of learners, and there are elementary lessons for the use of beginners in the school, and advanced lessons for the more advanced; and in each of these workshops the use of one set of tools only is taught, and the pupil remains in this one workshop until he has mastered the theory and practice of this one set of tools. He is then graduated into a higher workshop, until he has finished the whole course; and he learns how to work in wood, and learns metal turning, and fitting, and planing, and forging. And some of the coarsest and some of the most repugnant kinds of labor are thus made interesting, and redeemed from their coarseness, because they are now saturated with understanding. The labor of the hands becomes attractive, because it blooms with mind.

If the machine be regarded as a development of the tool, then in the same manner as he who works with tools is taught the principles underlying the use of tools, the ordinary factory workman also, who spends his days among machines, ought to learn to understand the principles embodied in machines. Enough of physics and mechanics must be taught in the school to attain at least this end.

IMPORTANCE OF THE EARLY BEGINNING OF INDUSTRIAL TRAINING.

Now, furthermore: I believe that work education can be given to the youngest children, in the lowest classes of the school. And here is perhaps the main point, in which the importance of what we consider to be our new departure in education becomes apparent. For industrial education has long ago been given in many countries of the world to older children—boys of fifteen or sixteen years of age; but industrial education has never, to our knowledge, been introduced in the lower classes of schools; has never been combined *organically with the whole scheme of education*, and been made to support and coalesce with all the other studies of the child. And there are other ways, assuredly, which must occur to everybody, in which industrial education will tend to elevate the workman. It will develop his æsthetic sense, giving him something of the *artist's pleasure* in his work, giving him also greater *skill*, and thus enabling him to command *higher wages* and more of the comforts of life. But it is with industrial education as a means of fostering the dignity and independence of the workman that we are mainly concerned. For upon the possession of these qualities it will depend whether the social inequalities that exist between the working people and other classes of society will be gradually ameliorated, or so long as they must exist, will be endured in the right spirit.

NEED THAT THE RULERS OF A COUNTRY SHOULD BE EDUCATED.

And here, having referred to social inequalities, I should like to dwell upon the necessity, especially at the present time and in our country, of elevating labor in the eyes of the laborer. For, in this country, the political equality of the entire people is the very fundamental principle of our form of government. But history has shown, in lessons whose terrible significance ought not to remain unheeded, that wherever political equality exists, and with it great social inequalities, there the greatest danger menaces republican liberty. The people are taught to consider themselves sovereign. From them all authority emanates. There is no distinction between the richest and the poorest in their rights before the law. Every citizen is, as it were, a king; but thousands on thousands of these kings are kings in rags. They have all the proud feeling of independence and of equality with their neighbors, but their actual condition comports ill with these pretensions. They are poverty-stricken, live meagrely in wretched houses, in filthy quarters of large cities. They cannot help comparing their own surroundings with the palatial residences of others, with the ease and abundance enjoyed by their neighbors, while their own hard drudgery scarce yields them the crust of bread which they need to satisfy hunger. And they cannot help reflecting that those others are no more than their equals, and they are goaded even into mad, mob fury by the thought that those who are more fortunate than themselves have no title to what they possess.

THE PECULIAR DANGERS WHICH MENACE A REPUBLIC.

It is in this way that Anarchy arises, and Freedom is entombed amid the ruins of civil order. It was in this way that Florence fell into the hands of the Medici, because the poor republicans would no longer tolerate the difference between themselves and the rich republicans; and the rich republicans, becoming alarmed, and willing to sacrifice their liberty rather than their riches, called in despotism to keep down the hungry crowd by force of arms. It was in this way that French republicanism fell, because the men in blouses, hearing of nothing but liberty, fraternity, and equality, concluded that it was neither liberal nor fraternal nor, above all things, a sign of equality that they should drink sour wine and live on the miserable pittance of a few sous, while there were others, their fellow-republicans, who dwelt in sumptuous affluence and controlled the wealth of nations; and so, the possessing class of France being terrified, it became possible that an adventurer, whose hand was stained with blood, the murderer of the 2d of December, was able to establish a second time the yoke of imperialism, and that his sins were forgotten, his falsehoods forgiven, his murders condoned, and he himself was hailed as the savior of society.

THE CONDITIONS IN THE UNITED STATES.

And in our country also, though the safeguards are still strong, though the very idea of a subversion of our institutions seems to many so improbable as to be outside of discussion, yet have we, too, already had distinct warnings that all is not well. The flames of the Pittsburg riot, which startled the whole land, were kindled during the last financial crisis. A season of prosperity has returned to us, and what has gone before is forgotten by many. But another panic will come after the prosperity; the experience of the past leads us to expect that with almost absolute certainty. And, when there are again want and starvation among the people, who will say why discontent should not again assume wild forms? The same conditions are beginning to exist here as elsewhere; and, where there are the same conditions, it is inexorably true there must always be the same results. A pauper class is beginning to grow up among us, incapable of permanently lifting themselves to better conditions by their own exertions, incapable of obtaining the satisfaction of their most natural desires, and only rendered the more dangerous and furious by the sense of equality with all others, with which our political institutions have inspired them. If the evil has not yet become so aggravated as it is in the Old World, let us utilize the time of respite which is given us by undertaking earnest and vigorous measures to check the evil's growth. And, of all these possible measures of prevention, a suitable, a sensible system of education is assuredly the most promising. Let us use what influence we have to correct the false idea of equality which is everywhere current around us. Let us teach the people the true meaning of the great principle of equality—namely, that all men are created equal in respect to certain fundamental rights, such as liberty, the protection of the person, and a right to the pursuit of happiness, but that there is by no means equality of natural fitness and endowment, and that the offices of life must always therefore be unequally divided. Let us impress upon the minds of the children that the business of life will always be carried on in a hierarchy of services, and that there is no shame in doing a lesser service in this hierarchy; that all honor accrues to us only in doing that function well to which we are committed, and taking pride and finding dignity in its performance. And to enable the working people of the future to take pride and find dignity in the work of their hands, is the object of the work education which we are seeking to introduce into our school. I do not say that the young are to be taught to consider the present hierarchy of services as arranged upon a just or fair plan; I do not say nor should I teach that those are now in the higher grades of society who ought to be, and those in the lower who belong there. The reverse is often true. But, if a change in the interest of righteousness is to be made, it must surely come mainly from the working people themselves. It is their heightened self-respect, it is their increased intellectuality, it is their sense of their dignity as working people, which will alone enable them to accomplish the wished-for result.

And there is another and a higher reason why greater intellectuality should be infused into labor, and why the organic union of work instruction with other branches of instruction will be of far-reaching importance. For the intellectuality of labor is an indispensable means of emancipating the minds of the laborers. We do not in our Workingman's School interfere with the religious faith of any of our pupils. We hold, in the strictest possible sense, to the principle of unsectarian education.

After speaking of the habit of mere mechanical drudgery into which workers are prone to fall, he urges that it is most essential that all should seek to know and understand the reasons of their actions, and so take intelligent interest in their daily employments; and this he holds the teaching given in these schools will enable the pupils to do.

INDUSTRIAL TRAINING ADDS INTEREST TO LIFE.

And so there can be nothing more salutary, nothing more wholesome, nothing more efficient for good, than a system of work education, which shall relieve industry of its deadness and its dullness, and give to the laborers the reasons why, of those occupations with which they are daily concerned.

We lend, moreover, an entirely new import to the method of industrial education in the school. We are seeking to apply the principle which ought to be at the foundation of every modern scheme of education: namely, that, as experiment conjoined with observation is necessary to the discovery of truth, so object-creating must supplement object-teaching in that rediscovery of truths which it is the purpose of all education to facilitate. Therefore, work instruction is not a something outside the regular instruction; it is an organic part of the regular instruction. It becomes a means of teaching mathematics, for instance, more thoroughly, causing the pupils to work out mathematical truths with their very hands; it becomes the means of teaching natural history more effectively; it is worked into inseparable connection with the entire scheme of the scholar's mental and moral development.*

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* We hope, for instance, by the organization of the little workers in the workshop to foster the co-operative spirit among them, with a view to their taking up seriously later in their lives that co-operative system for which our whole scheme of education may be looked upon as a preparation.

It becomes the means of making the hand a wise and cunning hand, by putting more brain into it. But, on the other hand, it also makes the brain a clear and vigorous and enlightened brain, by giving it the salutary corrective of the demonstrations of the hand. And so the system of work education, considered as an advance in education, generally has a value of its own.

He then proceeds to develop the higher aims of this new education. The theory, here enunciated, calls for more than a passing glance; for it is not certain but that, tested by this high standard, some of the experiments that have recently been begun with much blare of trumpets will be seen to lack the inspiration of a lofty ideal, and, therefore, to be in danger of falling into the merest mechanism; for there is surely no magic power of educational salvation in the mere manipulation of the tools of carpenter and blacksmith, divorced from a nobler purpose than the mere acquisition of their dexterous use, valuable as that is in its proper turn. In closing his address he thus portrays the informing purpose of this school, and the high ideal of education held by its instructors and promoters.

THE IDEAL OF THE NEW EDUCATION PORTRAYED.

And here it may become apparent why our school is not an industrial school in the sense which commonly attaches to that name. We shun the name, and call ours the Workingman's School, because we wish to keep away from us the ideas that are associated so frequently with the name of industrial schools. We do not propose to give our pupils an aptitude for any particular trade; we do not propose to make them tailors, or shoemakers, or printers. We would consider that a retrograde step, rather than a step in advance, if we were to prevent these young lads and little girls from spending even a few years in gaining knowledge, without any reference to the pitiable necessities of their after-lives; we do not propose to yoke their young souls before they have had time to expand at all into the harness of trade, merely for the sake of getting their bread better afterward. We propose to give them that which will secure them bread thereafter, and many of the higher treasures of human existence, we hope, besides; we propose to give them a broad and generous education, such as children of the richest might be glad in some respects to share with them, which will not only prepare them for their future station in life, but also make them capable of living in a truly human way; we propose, in one word, to educate our pupils so that they shall become not working drudges, not working slaves in the tread-mill of labor; but so that, while they remain *working* men and *working* women, they may also he, in the best and noblest sense, working *men* and working *women*. And in like manner, our school shall not be a "ragged school." We do not want the odor of the charity school about it. The rooms shall be light, and airy, and bright, and the appointments such as would be found in any well-conducted school; and neither do we want the sulky air of the charity pupil about our pupils. The tone of the children shall be manly, and joyous, and free; and they shall not know at all, if we can help it, until they are much older than they now are, that they have any one to thank for what they receive.

THE VITAL PURPOSE OF THIS SCHOOL.

Such a school, then, we would build up, whose fundamental purpose may be expressed in the words, *the emancipation of the working classes through their work.* And, if we cannot find competent teachers here, why should we wait till American universities will give us what we want; can we not call, if we are supported in this undertaking, the most competent teachers from abroad, and so transplant the richest results of European experience to our own soil, though always so modifying the matter and the method of instruction as to suit the altered conditions of American life?

And if there be any one who says, What business of ours is it to take an interest in such endeavors? What interest have we in the children of laborers? Let the public school system go on. If it must be changed, some one will in due time change it; but why should we put ourselves to trouble and expense for such an undertaking? O, friends, if any one asks such a question, we cannot answer him! That he should ask the question is proof that he has no true heart for the needs of his fellow-beings. When did it ever occur to the men who spilled their precious blood like water on the battle-fields of the Rebellion, to ask what business of theirs it was that the slave's chain should be unloosed, that the black man's rights should be conceded, that the blot of human bondage should be erased from the Constitution of our land? The men who died for the cause of liberty on the American Continent knew that it is the highest interest of every individual that right shall be done and that wrong shall be overthrown; that happiness shall be multiplied on earth, and unjust sufferings shall be washed away. And so it is the highest personal interest of every one that the chains of ignorance also shall be broken which so heavily load down the multitude, and that the sufferings shall be obliterated which are but the consequence of their mental helplessness. And if any one says: Yes, the work is great and holy, but it is too great, too vast, too mighty for us to do it, I answer: We can do at least our part; we can make a beginning in the right direction; and, when the good fruit begins to appear, when the good results begin to show themselves, as they will and must, others will come to our assistance, and the good work will not be allowed to fall to the ground.

THE AWAKENING POWER OF THIS METHOD ILLUSTRATED.

The other day, when I visited this Workingman's School of ours, of which the two lower classes are now in operation, I asked the principal whether he could show me who is now the best pupil in the school. He pointed to a little fellow in one of the foremost rows, and said: "This little boy came to us almost covered with filth. And for a time it was necessary to wash him every morning in the school itself before he could be admitted to his class, so neglected he was, and he appeared to be utterly dull and stupid. But after a time it seemed as though with the physical filth the mental filth also wore off, and he became bright and attentive, and he is now our best pupil, and it appears as if a new light had been lit in his soul." More of that light we want. We feel we have a right to appeal to our fellow men and women to help us kindle it.

As Professor Adler, in the address just quoted, set forth the philosophy underlying their efforts, so in his report of the actual conditions of the school he gives its history and recites its future needs.

THE WORKINGMAN'S SCHOOL.

DIRECTOR'S REPORT.

To the Board of Trustees and Members of the United Relief Works, etc.

The Free Kindergarten, which is under your protection, has now been in existence for three years; the Workingman's School, its necessary continuation, has been in operation since February last. The two together count one hundred and fifty pupils. The peculiar features of the educational system, adopted in our institution, are explained somewhat in detail in the reports of the Principals of the School and the Kindergarten, which I have the honor to transmit to you herewith.

I feel that we are justified in congratulating ourselves upon the measure of success which has thus far attended our efforts. But, at the same time, I am compelled to call your attention to needs of the institution, which urgently require to be met. We have begun this educational enterprise by building upward from below, believing that thus alone could our structure be raised securely. Our start was made with eight children, forming the first class of the Kindergarten. Rapidly the Kindergarten increased, and class after class was added, as new applicants kept pouring in. In the fall of 1878 a complete Kindergarten was in operation. In the fall of 1879 twenty-five children had passed through the Kindergarten and were ready to be graduated from it. The question then arose, whether we should allow these pupils to drift away from us, and thus, in a great measure, to lose the benefits which they had obtained; whether we should permit them to enter the public school and become subjected to its mechanical methods, or whether we should take upon ourselves the responsibility of continuing their education, and open for them a new school of our own, such as had not yet existed in this community, in which the reformed system, begun in the Kindergarten, might be continued through all the higher stages of instruction. The temptation at that time was great to proceed in another direction. We might have opened other free Kindergartens in different districts of the city, in addition to the one which we already had in working condition, and thus gradually have spread a whole net-work of free Kindergartens over the entire city. The extent of such a work would doubtless have dazzled the public eye, and would have redounded to the glory of its founders; but of what permanent use could it be to teach many children well from their third to their sixth year, if the rational methods were not to be continued beyond the sixth year, and inferior methods were to prevail thereafter?

DESIRABLENESS OF SUCH A SCHOOL AS A MODEL.

It seemed to us, therefore, far more necessary, far more calculated to really advance the public good, that one Model School should be erected, in which the entire system of rational and liberal education for the children of the poorer class might be exhibited from beginning to end. We ventured to hope that such an example, having once been set, would not be without effect upon the common school system at large, and that the extension of our work would proceed by the natural course of the "survival of what is fittest." It was decided, therefore, that the twenty-five graduates from the Kindergarten should be invited to remain with us, that a complete school should be instituted, and that a teacher should be at once appointed to take in hand the instruction of the lowest class. The munificence of Mr. Joseph Seligman, to whose name we cannot refer without gratitude and respect, at this stage enabled us to go on with our undertaking, when the dearth of funds would otherwise have compelled us to wait, or perhaps desist altogether. His timely gift of ten thousand dollars was the means of starting the School, and on this, as well as on other accounts, his memory deserves to be cherished by those who cherish the educational interests of the people.

THE INSTRUCTORS.

The establishment of the School having been decided upon, we were successful also in finding a teacher who appeared to be especially adapted for the purposes of this Workingman's School. He is a gentleman, theoretically and practically acquainted with the results of European pedagogy, who came to us with high recommendations from the Hessian school authorities, under whom he had been employed, and who is also possessed of the mechanical skill so necessary for the proper fulfilment of the functions of his position. He entered at once with spirit and earnestness upon his new task, and the accompanying report, containing a series of patterns designed by him for the earliest stages of work instruction, will afford to you evidence of his capacity. His assistant is a graduate of the Normal College of this city, and we are particularly happy in seeing the union of the American and the foreign element in education, which we aim at (with the dominance for the time being of the more scientific foreign element), thus symbolized in the persons of the two instructors who are at present employed in our institute.

And now, as to the needs of the school, of which I have spoken. We have already seven classes in the Kindergarten and two classes in the Workingman's School.

He shows the need of ampler accommodations and of increased funds.

THE EXPERIMENT OF INTEREST TO THE COMMUNITY.

He then says:

Our work has no selfish purpose in view. We make no distinction because of creed or race. The School simply takes the children of the poorest class, who, in addition to instruction, receive also food daily, and clothing when necessary. It is a new departure in education and philanthropy which we are attempting. The whole community is to derive the benefit of our work. Under these circumstances, we feel that we have a right to call on all persons, whatever their connections may otherwise be, for aid and support.

* * * * * * *

Having thus set these facts and these needs before you, I close by earnestly calling on every friend whom our School has, to help in winning for it other friends. For there is far too grand a hope embodied in this school project for us to stop short of the aims which we have proposed to ourselves.

Trusting that the members of the Board and the members of the Society may think as I do in this matter, I beg them to be of good cheer, and to believe that we can succeed, if we only will it.

FELIX ADLER.

The following report by the Principal gives in detail the method of instruction:

PRINCIPAL'S REPORT.

To Prof. Felix Adler,
Director of the Workingman's School and Free Kindergarten.

At your request I have prepared a statement of the purposes of our School, which I respectfully submit, as follows:

Our School is to consist of eight classes, of which two are now in operation. The scheme of studies will be found appended at the close of the report. It embraces four hours' instruction weekly in the use of tools, and to this I beg leave to call especial attention.

The accompanying illustrations, and their explanations, are intended to show what we teach and how we do it. We must, however, premise the following:

THE THEORY OF THE SCHOOL.

The necessity of training man to labor from his earliest youth is beyond dispute. Years ago, accordingly, schools were already projected and founded in Russia, Switzerland, Sweden, and this country, the pupils of which are educated in workshops connected with said schools. Such instruction, however, rarely begins until the age of sixteen; only in exceptional instances does it begin at fourteen, and this is too late; the results achieved must ever remain unsatisfactory. We, therefore, have undertaken to institute a reform in education in the following two ways: First, we begin industrial instruction at the very earliest age possible. Already in our Kindergarten, we lay the foundation for the system of work instruction that is to follow. In the School proper, then, we seek to bridge over the interval lying between the preparatory Kindergarten training and the specialized instruction of the technical school, utilizing the school age itself for the development of industrial ability. This, however, is only one characteristic feature of our institution. The other, and the capital one, is, that we seek to combine industrial instruction organically with the ordinary branches of instruction, thus using it, not only for the material purpose of creating skill, but also ideally as a factor of mind-education. To our knowledge, such an application of work-instruction has nowhere, as yet, been attempted, either abroad or in this country.

DIFFICULTY OF DEVISING WORK FOR YOUNGER PUPILS.

In practically attacking our problem, however, we were compelled to meet great difficulties. The choice of material for the children's work presented a first difficulty.

The softest wood is too hard for the delicate fingers of children seven years old, and, moreover, requires the use of heavy and sharp tools, such as are not willingly entrusted to little ones at so tender an age. We finally decided to use clay. Clay, after it has been prepared in a special way for this purpose, is easy to cut and to manipulate, does not stick to the tools, and is not brittle enough to break and crumble. This proved entirely successful.

A complete series of patterns had to be invented which might be worked by young pupils out of this material. Thirty such patterns have been produced, and in them we have the system of elementary industrial exercises, with which we begin. These patterns are described in our illustrations 1–30.

DIFFICULTIES OVERCOME AND CHILDREN AT WORK.

Let us now look at our little workmen at their work.

By means of a simple arrangement the school desks are converted into work-tables. Every child is supplied with a set of cheap and suitable tools. The work lessons occur in the afternoon on two days of the week, and last two hours each time. The pupils are obliged to behave as quietly during work as in the other school hours; only just so much whispering is permitted as is necessary for the requesting and rendering of necessary assistance. We endeavor to give the school-room the air of a well-conducted workshop. Each pupil-workman has his own place and tools, for which he is held responsible so far as possible. All begin work simultaneously, and stop at the same moment.

We now come to the work itself. Plates of clay of irregular outline, ten to fifteen inches in length and breadth, and about one to one-and-a-half inches thick, are given the pupils.

THE COURSES DESCRIBED.

The first lesson consists in the construction of a square from such a plate. The children place their rulers across one side of it, and with their pointed chisels draw a line along the outer edge (A B C D). This is not so easily done as one might think. The children must practise the following precautions; they must apply the ruler correctly, and hold it firmly with the left hand so that it cannot slip and produce a crooked instead of a straight line; they must also select the proper tool, and hold it lightly and skilfully, if the straight line is really to be faultless. Finally, from the outset, they must learn to estimate the amount of their material, and to avoid wastefulness. To this end they are shown how to move the ruler toward the edge as far as possible, so that none but useless pieces, or, at least, few others, may fall away. When this is done they take up their chisels and smooth off the cut side according to rule: that is to say, they learn to wield their tool after the fashion of the master workman, in the manner in which it most speedily and accurately does its work. If they have done this the cut will show the required perpendicular direction, an impossibility, if the work has been performed incorrectly or awkwardly. Each worker thereupon applies his ruler to the section, and convinces himself that it really is accurate. The side E F is then completed.

We come to the second part of the work: the square is applied to the plate of clay; the second adjacent side, E G, is ruled and then chiselled off like the first. Then the children learn the use of a new tool—the carpenter's square; they learn the signification of a right angle (R), and the eye soon grows so accustomed to this new form that it detects the slightest deviation from it. Not all, indeed only a few among the pupils are able to do this work correctly at first; but after many trials and repeated corrections the little workman gradually becomes clearly aware of what is required, and how the squares of clay look when they have been marked off perfectly. Now, proceeding from E, equal portions are taken away on either side, E F, E G. Here the child learns to know and use the rule, and becomes acquainted with the simplest lineal measure. The two remaining sides, G H and F H, are constructed in like manner to the first two, and the square is then so far finished.

We now give the class a number of exercises on the square by means of which all the properties of this fundamental geometrical figure are rendered more and more familiar to the pupils. Thus it becomes clear that the square has four sides of equal length, and that when one side is known the length of the other is at once known also. It is further obvious that the square possesses four right angles. Finally, by applying the carpenter's square to all the sides of the clay square successively, it is seen that the opposite sides are equally distant from each other at all points; hence, that they are parallel.

Further exercises: the children are told to lay their rulers across the squares from E to H, and draw a line upon the clay. They measure this line, and are asked, Is it longer or shorter than any one side? Then another line is drawn from F to G, and also measured. How long is this? we ask. Surprised and in joyous excitement they discover that the lines are perfectly equal. They are then told that these lines which they have drawn are the diagonals, and shown that *they have themselves proved the diagonal lines in a square to be equal to each other*. This was not taught them; they have found it out for themselves, and will never forget it. The little ones quickly discover that only two diagonals can be drawn in one square, and that these intersect each other at a certain point. They are now directed to measure again, and they find that this point and no other is equally distant from E, G, H and F, and that the diagnonals cut each other into halves. By application of the carpenter's square they now find that again there are four right angles about this point (centre). The sides of the square are likewise divided into halves, and the points K, L, M and J, found. The lines that connect K, M, L and J, must pass through O, the central point of the square.

When all this has been shown, practically illustrated, spoken about, and thoroughly understood, the square may be constructed in another manner. New plates are taken up; each child designates the central point O, according to its own judgment. A straight line is drawn through this point and then another, cutting the first perpendicularly. These two lines represent the diagonals. By making these of equal length from the point O, designating the new points E, F, G and H, and connecting the latter by means of straight lines, we again have a square that fulfils all known conditions.

The exercises on the square are continued until the larger number of pupils can make one without assistance, and are perfectly familiar with its properties and relations. It is a matter of course that the squares are made in various sizes, according to a specified measure, so that the children may be thoroughly exercised in lineal measure.

The undersigned, after having taught the lowest class of the school during a whole month—i. e., during sixteen work hours—had the pleasure of seeing that nearly all his pupils were able to handle the clay square according to his expectations. Although the exercises are continually made more difficult, it is yet plain that they will be mastered in shorter and shorter time, in proportion as the hands and eyes of the children daily grow more practised, and what has already been taught comes up in review at almost every fresh stage of acquirement.

The succeeding exercises up to No. 14 are recited, and consist of the study, in like manner, of other geometrical forms, such as rectangles, triangles, etc. Several pages of illustrations giving 41 different exercises are appended to this report. The first 14 exercises are taken by the pupils in class VIII, which they enter at six years of age. The seven year old pupils begin with No. 15.

A new series of lessons begins with No. 15. The pupil now for the first time makes use of the compass. A regular hexagon is marked off by means of the radius on the circumference of a circle, and then inscribed within it. It is not necessary to dwell on the gain in mathematical knowledge which is here obtained, and all the useful and noteworthy facts that may here be shown. In the illustration itself it is indicated how the point O, the central point of the square and rectangle, is to be found.

It is understood that the work of the second school year shall begin with No. 15. This is followed by fifteen other numbers. * * *

When the children reach the age of nine, and have already worked for two years, it may be assumed that they possess enough strength and skill to work in wood, and to manage a small saw. It may here be remarked that this has been proved by the experience of industrial schools in Germany, especially in Saxe Weimar.

Articles constructed of unbarked wood make a favorable impression when well executed, and their fabrication does not require an unusual degree of skill nor elaborate tools. As regards the latter, a saw, a knife, hammer, and nails suffice: for the smaller articles, a little glue is requisite. The materials may be maple, hawthorn, hazel, or similar woods, which are cheap, handy, easy of transportation, and can be manipulated in the school-room. These woods are procured in rods of various length, and from one-quarter to one-and-a-half inches in diameter. The articles constructed are: photograph frames, match boxes, saving boxes, four-footed garden furniture, and a particular three-footed sort (Illus. 31–37).

When the pupil has attained his eleventh year, and enters on his fifth school year, he is entrusted with a scroll-saw to work in wood, and later on, also, in zinc. This kind of work is in itself quite easy, except in its artistic finish, but very important. Here for the first time the pupil learns to work after a drawing, which drawing must be thoroughly understood. A new feature consists also in the opportunity now afforded for *designing patterns*, which tends to develop the imagination.

It is true that such work in wood and zinc, when not executed by proficient workmen, always has a rough and unfinished look, the wood being usually poorly cut out, and the various parts inartistically joined together, since it is rare that any one is able, without special instruction, to round off and smooth the cut edges properly. For this reason we propose to connect the rudiments of wood-carving with this sort of work. The necessary implements for wood-carving are a scroll-saw, drill, gauge, and file. The wood and patterns are cheaply procured; of the latter, only the copies *made by the pupils themselves* are used.

The work done in zinc is almost new, and little known as yet. It forms a higher step in this species of work. The awl replaces the drill, and a foundation of wood is used. Remnants of zinc can be bought up cheaply from tin-ware dealers. The simplest house and kitchen utensils are manufactured, such as pot-covers, spoons, frying pans, strainers, pots, salt-cellars, etc., etc., (see Illus., 38-42).

The seventh school year begins with instruction in the large field of carpenter's work. The complete outfit of a workshop is now requisite, and the carpenter's bench becomes the pupil's true work-table, while various planes, drills and saws, constitute the necessary tools.

The articles manufactured are at first limited to the most simple household utensils, but the pupils speedily advance to more complicated work. When this branch has been thoroughly pursued for a period of two years, carving and turning offer very few difficulties to the worker. The preliminaries here are always carpenter's work, and the free-hand exercises with the clay constitute an additional preparation.

This species of work forms the introductory step in the Russian workshops, and is followed by instruction in turning, and in the locksmith's craft.

Such is a brief outline of the industrial exercises planned for our School, and of which the earlier are already in operation. The plan is by no means in so far definite as not to be open to modifications, which our own experience, or the criticism of others, may suggest; it is the provisional plan upon which we propose to proceed, and the first steps of it at least have already been approved by experience.

RELATION OF THIS WORK TO OTHER PHASES OF EDUCATION.

These exercises possess *educational value* in many different ways, and may be shown, as we have said in the beginning, to be in close connection with many branches of instruction, and with the collective education of the pupils. Instruction in drawing must of necessity go hand in hand with the modelling. What is drawn here is manufactured there, and *vice versa*.

Further, the rudiments of geometry are taught by means of this work far better than with the aid of mere diagrams. And a large number of definitions and propositions, which are commonly remembered by routine, are, by our method, demonstrated to the eye, and thus remain stamped on the mind forever.

Knowledge of arithmetic is also incidentally acquired. The children learn to cipher practically, to add and subtract, to read the figures on the scale, to divide and multiply them in the most various combinations.

Even certain of the facts of natural history may be taught in connection with the work. The children learn to know the material which they are handling; they study various kinds of wood, their properties, marks of recognition and adaptation. The teacher goes back to the tree out of which the wood has come, and explains the formation of the annual rings so easily perceptible to the children. They are taught from these how to determine *the age, quality, and value of the wood.* Forms of nature, also, are actually copied in wood, clay and plaster, whenever such imitation is possible; and when it is not, recourse is had to drawing.

In this way we endeavor to make work-instruction contribute towards the general development of the child. *The hand is educated by the mind, the mind by the hand.*

GENERAL ADVANTAGES.

What further advantages does the introduction of this species of work-instruction offer? A great moral advantage, besides the purely intellectual ones. The habit of working together, of living, as it were, together, exercises the best moral influence. At an age when they are most susceptible to educational influences, the children learn to live harmoniously in social groups, and become accustomed to mutual aid and support. No individual can place himself above another; all have similar duties, equal rights, equivalent claims. But, on the other hand, there is no false, artificial equality. The children are taught from the beginning the necessity of subordinating themselves to the more able and skilful, while, warned by their own failures, they learn to sympathize with the weaker and more helpless.

It is this spirit which must, in its consequences in life, be of infinite significance to the artisan class. Most co-operative societies of workingmen have failed because their members refused to submit even to their own officers, to take proper interest in each other's work, because, in fact, co-operation is impossible without profound practical education in the duties of social humanity. As a step towards such education, we propose to allow the pupils of a class to select a foreman among themselves; this foreman is appointed to be the general adjuster of difficulties and helper of the others, without, however, ceasing to work like an ordinary laborer; his rank increases his duties instead of diminishing them. The compensation for this increase of effort will be the confidence of his comrades, and the sense of leadership founded on ability. The influence of an elected foreman is much greater and more efficacious than that of a pupil who should be appointed to this office by the teacher; for the latter is always regarded with distrust and envy by his fellows.

Work-instruction brings a beneficial and refreshing change into school life. Childhood loves work, and by our system this love for work is cultivated and preserved. Our ultimate aim, however, is to build up a self-reliant working class, really educated for its own sphere, so competent for its duties as to be able to work independently. An educated working class, occupying such a position, would constitute a beneficent force in the community, instead of being, as it often is now, an unformed, chaotic power, more or less menacing to the order, or even to the existence, of the State.

With these aims it is impossible to limit industrial education to the acquisition of technical instruction in the arts by which the artisan is to earn his living. There must be some conscious value in the life in order to really make it worth while to earn a living; hence, our effort to secure for the children of workingmen—destined to become workingmen themselves—the benefits of *a liberal, that is, a liberating education.*

METHODS OF TEACHING THE COMMON ENGLISH STUDIES.

We endeavor to teach thoroughly, whatever branches are taught in our School at all. We teach reading according to the synthetic analytical method. The child does not spell, it reads phonetically, and what it has read in this manner, it writes; and what it has written it reads again, and understands. The reading of print is reserved for the second school year. Why should we begin by placing two difficulties, two alphabets, in the child's way? Why should children be taught to write, or rather draw, printed letters—characters which they never use, and which only serve to render the hand stiff and ungraceful?

In the study of geography we pursue the method that has proved successful in some of the best schools abroad. A very great number of men and women live in astonishing ignorance of their immediate vicinity. They may have learnt by rote to repeat the names of distant countries, the capital cities of those countries, the size of the population, the staple products, etc., but of real geographical knowledge they are destitute. Our pupils are taught in the first instances, how to make diagrams and maps of their own school-room, of the streets leading to their several houses, then of the city and its adjacent territory, etc. They are thus led, in the study of geography, step by step, to practical acquaintance with what is unfamilar to them by comparison with what is familiar. The progress is logical—from the near to the remote, from the known to the unknown.

In the teaching of history to these young children, we hold it essential that the teacher should be entirely independent of any text-book, and able to freely handle the vast material at his disposal, and to draw from it, as from an endless storehouse, with fixed and definite purpose. We attach even greater importance to the moral than to the intellectual significance of history. The benefits which the understanding, the memory, and the imagination derive from the study of history, are not small. But history, considered as a realm of actions, can be made especially fruitful of sound influence upon the active, moral side of human nature. The moral judgment is strengthened by a knowledge of the evolution of mankind in good and evil. The moral feelings are purified by the abhorrence of the vices of the past, and by the admiration of examples of greatness and virtue. Text-books are not to be discarded, but their choice is a matter of great difficulty. Thus, all books in which historical instruction is given in the shape of printed questions and answers, are highly objectionable. They are convenient bridges which lead to nothing.

Lastly, we must mention as a peculiar feature of our institution, the giving of systematic moral instruction to the pupils, without reference to doctrines of theology. Such teaching is not given in any of our public schools, nor, to our knowledge, in any private schools. And yet, instruction in the system of duties is a necessary element of all education, is, indeed, the keystone of the whole arch of education, without which any plan of studies must remain essentially incomplete. We propose to offer such instruction to our pupils, and thus, to the best of our ability, to round off the scheme of their education.

Having such intentions, we take courage to hope that our School may fulfil its mission, and that we shall not lack the criticism, if there be occasion for it, but at all events, the counsel and support of good and noble men and women in perfecting the work.

G. BAMBERGER.

SCHEME OF STUDIES.

The following is the scheme of studies for the youngest classes, the only classes then organized in the Workingman's School. The figures represent the number of hours given to the study each week. Composition, Grammar, and German are added in the third year. Geometry in the fourth year. Physics in the fifth. The studies in the fifth and sixth years are the same. Algebra is added in the seventh year. The seventh and eighth year classes have the same studies. The studies of the first year are continued through the course, with the additional studies, as stated.

Class VII.	
Reading Writing	5
Drawing	2
Arithmetic	4
Geography	2
History	2
Natural History	2
Singing Calisthenics	2
Work Instruction	4
Ethics	2

Class VIII.	
Reading Writing	5
Drawing	2
Arithmetic	5
Object Lessons	5
Singing Calisthenics	2
Work Instruction	4
Ethics	2

The following statement shows the cost of the schools for the year:

TREASURER'S STATEMENT.

January 1st, 1880, balance	$503.52
Receipts for the year ending December 31st, 1880	3,196.05
	$3,699.57
Disbursements for the year ending December 31st, 1880:	
Salaries	$2,008.00
Lunch	615.00
Rent	750.00
Fuel and sundries	110.00
	$3,483.00

OFFICERS OF THE WORKINGMAN'S SCHOOL AND FREE KINDERGARTEN FOR 1881.

Prof. FELIX ADLER,
Director of the Workingman's School and Free Kindergarten.

EXECUTIVE COMMITTEE OF THE WORKINGMAN'S SCHOOL: *

Dr. JOSEPH GOLDMARK,
Dr. JULIUS SACHS,
Mrs. MARY PUTNAM JACOBI, M.D.,
Prof. CHANNING WHITTAKER,
Prof. DE VOLSEN WOOD,
Mr. ALFRED R. WOLFF, *Secretary.*

EXECUTIVE COMMITTEE OF THE KINDERGARTEN:

Mr. MARTIN S. FECHHEIMER,
Mr. SIGISMUND JONAS,
Mr. JAMES GOLDSMITH,
Mrs. A. S. KOHN, †
Mrs. S. HIRSCHBACH,
Mrs. JULIUS ROSENBAUM, *Secretary.*

Principal of the Workingman's School—Mr. GABRIEL BAMBERGER.
Teacher of Class VIII—Miss ALICE SPEAR.
Instructor in Drawing—Miss L. FERY. ‡
Principal of the Free Kindergarten—Miss FANNY E. SCHWEDLER.
Assistant Kindergartners—Miss FRANCIS WISE, Miss G. GORDON.
Pupils of the Normal Class now assisting in the Kindergarten—Miss F. Heartt, Miss M. Schem, Miss L. Mills, Miss I. Bellis, Miss M. Calisch, Miss I. Mandel, Miss L. Kierski, Miss G. Goldsmith, Miss H. Oberbauer, Miss H. Bruckmann.

THE WORKINGMAN'S SCHOOL, SECOND AND THIRD ANNUAL REPORTS.

In transmitting, as President of the Board of Trustees, the combined second and third annual reports, (January 1, 1881, to January 1, 1883) of the Workingman's School as made to him by the Principal, Professor Adler gives, in lieu of an extended report as Director of the School, the article concerning the School, contributed by himself to the Princeton Review, (March, 1883,) in which the purpose of the School, and the theory of the "Creative Method" are set forth. In his brief preliminary report he says, speaking of the success of the School down to the close of the year 1882:

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* The Workingman's School and Free Kindergarten are one institution, but it has been necessary to create two executive committees, in order to divide the onerous work of management.

† It is proper also to mention the names of Mrs. Jacobs and Mrs. Hertzog, who have rendered valuable and voluntary assistance to the Ladies' Committee of the Kindergarten, in visiting the homes of our pupils.

‡ Miss Fery has given her able services as a volunteer. Sincere thanks are due to her for the sacrifices she has brought and is still bringing for our pupils.

> Concerning the outward progress of the School, I can give a most cheering and encouraging account. Though the institution is comparatively young, though only five years have elapsed since the Kindergarten was founded, and three years since the School proper was started, the institution has already gained no inconsiderable number of warm-hearted and open-handed friends. It is becoming more and more generally known that the United Relief Works, under whose auspices the Workingman's School and Free Kindergarten are conducted, is an organization totally distinct from the Society for Ethical Culture, and that membership in the former does not by any means imply the support or endorsement of the opinions on religion accepted by the latter. Accordingly the number of subscribers to the Relief Works, who are not members of the Society for Ethical Culture, is now happily on the increase, and we already count one hundred and fifty such subscribers on our list.
>
> During the last two years it became apparent that the quarters hitherto occupied by us at the corner of Forty-fifth Street and Broadway were wholly inadequate to harbor the crowd of pupils who besieged our doors for admission. If the educational enterprise which we have begun was worth prosecuting at all, it was necessary that a suitable building should be provided, in which the scheme of the School might be unfolded to its full proportions. Accordingly a movement was started among the friends to raise sufficient funds for the erection of an appropriate school edifice. Meetings were held and a building committee was appointed, a suitable site was selected and purchased, and the work of erection soon began in good earnest. We cannot speak with sufficient thankfulness of those who have had this matter in charge. * * *

After expressing the sense of indebtedness of the Society to those not members, who have aided in the work, he says:

> They and the committee will feel that their labors are in a measure at least rewarded by the completion of the noble yet modest edifice which now stands at 109 West Fifty-fourth Street, and which is soon to be dedicated to its uses, to become, let us trust, a centre of light and good influence for the entire community.

He then recites the evidence of the general interest felt in this experiment as shown by the participation of the Mayor of the City, the President of the City Board of Education, and the Rev. R. Heber Newton, in the ceremonial laying of the corner-stone of the school building, and says:

THE EXPERIMENT ALREADY ATTRACTS THE ATTENTION OF EDUCATORS.

> Other evidence, too, is accumulating going to show that a wider interest has been created in the objects to which we are devoted. The Superintendents of various States and cities have written for detailed information concerning our School, with a view of introducing similar methods, if they should bear the test of experience, in the institutions over which they themselves have control. * * * Thus it is clear that we are laboring, not only for the pupils whom we directly educate, but that we may hope to help in a work of general reform. Let only the experiment of work and art instruction in the School be successfully demonstrated here, and it will be duplicated and reduplicated elsewhere, and the whole educational system of

> the country may feel the beneficent effect and may in time be lifted to a higher level.
>
> Thus it is evident that we have ample reason to look forward with ardor and interest to the future. Our cause is the cause of educational reform. What we aim at is to build up a higher and truer humanity in the generation that will succeed us! And if, in addition to being a movement for educational reform, ours is also a charitable movement, if we seek to apply the better education to the children of the poor rather than of the rich, it is because the poor need help most, and because education is the only radical means by which we can hope to lift the multitude of mankind above degradation and dependence.

After expressing appreciation of the self-denying zeal of the teachers, who, by reason of their interest in the work, have been content with inadequate compensation, he thus describes the teaching force of the School as illustrating the eclectic, liberalizing tendency of the institution:

> The Principal of the School is a graduate of a German seminary, and brings with him an intimate acquaintance with the methods of rational pedagogy, as his peculiar fitness for his position; the teacher of Natural History is a graduate of Harvard University; the teacher of the 7th class is a graduate of the Normal College of the City of New York; the teacher of the Workshop comes from the Stevens Institute of Technology; the teacher of Drawing and Modelling is a young artist of great promise. To Miss Josephine Lazarus, one of the teachers of History and Geography, Mrs. Clark and Mrs. David J. Seligman, teachers of Singing, and Miss Fery, for several years teacher of Drawing, we owe special thanks for the gratuitous service which they have given to their respective classes.

He then speaks of the responsibility which the Society has assumed in undertaking this school, and makes grateful reference to the aid already given by citizens of all creeds and nationalities, referring to Mr. Joseph Seligman and to Mrs. General Herman Uhl by name, and closes thus:

> Let us then take heart, and only see to it, that we make this School as perfect as we know how to make it; let us value it as the apple of our eye, and labor to make it worthy of the general support, then it will surely receive it.
>
> Very respectfully, yours,
>
> FELIX ADLER.

Copious extracts from Professor Adler's article will be given, both because in them the underlying philosophy of the methods followed in this experimental school is clearly stated, and also, because the article furnishes a clear exposition of the claims made for the new education only five years ago by one of its leading advocates. By the standard here set forth, the trend of this industrial educational movement in its present development, and the approach or departure of the arguments more recently urged by the advocates of the movement, towards or from the standard here promulgated, can be readily measured.

In any system of methods there is an inevitable tendency towards mere formalism, and the present movement seems, on the one hand, somewhat in danger of degenerating into a mere playing by the children at cooking and other employments, and, on the other hand, into an ignoring of all the higher ideals of education, and a consequent undue development of the purely practical part of the studies.

PROGRAMMES VERSUS PRACTICE.

That although certain studies are found enrolled in the courses of schools there is no absolute guarantee that they are taught as their advocates suppose them to be, is strikingly illustrated by an experience once related to the writer by the superintendent of a large city, who, finding that the study of drawing was on the schedule of studies in some of the primary schools, visited these schools for the purpose of seeing what progress the young pupils were making. As he was an enthusiastic believer in the merits of Walter Smith's system of Industrial Art Drawing, and in the uses of object teaching, his surprise may be imagined when he found that the instruction in drawing in these schools was limited to compelling the children to memorize the printed definitions of the simpler geometric forms; and this was done in good faith by the teachers, who themselves had never had any instruction in the new study. So, while from the printed schedule of studies the inference would be that the new methods were getting a foothold in the elementary schools of that city, it was found, so far was this from being the case, that the worst features of the old memoriter system were in full possession of the field. It may, perhaps, be safely assumed, in view of the present prevalence of Kindergarten and object-lesson methods of teaching, that the probability of the occurrence of just such errors has been eliminated; but recent publications of sundry pupils' examination papers, with their amusing and amazing blunders, have shown that the extent of misapprehension among the school children is almost illimitable. In these two classes of examples of instances of ignorance and misapprehension, both by teachers and pupils, may be found the strongest arguments for the establishment of Normal Schools for the teachers, and for the introduction of Kindergarten methods and Walter Smith's elementary courses in drawing, in all grades of the public schools. This, and more, has been attempted in the schools here described, and therefore the experiment is worthy of careful study.

Professor Adler's article in the Princeton Review was entitled "A New Experiment in Education." After explaining that this title had reference to the school recently founded by the New York City "Society for Ethical Culture," he proceeds to state the peculiar features of the undertaking.

"THE CREATIVE METHOD."

The salient feature of the new experiment is that it introduces what may be called the *creative method* into school-education. The system of teaching by object lessons has long been familiar to educators. It is proposed to improve upon this system by giving lessons in the *production* of objects. The step forward taken by Pestalozzi, when he summoned teachers to desist from the vain work of teaching the names of things, and to lead their pupils rather to a first-hand observation of things, marked a new epoch in the science of pedagogy. At present still another step must be taken, viz, from the mere observation to the production of things as a means of acquiring knowledge; and the taking of this step will mark another epoch in pedagogy. Froebel began to apply the principle of the creative method in his Kindergarten. But the Kindergarten system covers only three years of the child's life, while for the school age proper no valuable and tangible formulation of the creative principle has yet been given. Here the work remains to be done, and the experiment of which this article speaks is an attempt to do it.

DISTINGUISHED FROM "INDUSTRIAL."

I find it necessary, in this place, to mark the distinction between the creative method applied to education and what is commonly known as industrial education. A great deal of confusion is often caused and a vast amount of prejudice is needlessly aroused by the use of ambiguous terms, especially in designating new methods or ideas.

The phrase "industrial education" may have, and has acquired two entirely distinct meanings. As understood by one party it means the kind of education that is intended to foster industrial skill, and to fit the pupil, while at school, for the industrial pursuits of later life. Perhaps the majority of those who insist on the importance of industrial education in public schools, and who are urging its adoption, use the phrase in this sense. * * * But there is a totally different sense in which the phrase "industrial education" may be understood; not that education shall be made subservient to industrial success, but that the acquisition of industrial skill shall be a means for promoting the general education of the pupil; that the education of the hand shall be a means of more completely and more efficaciously educating the brain. It is in the latter sense, in which labor is regarded as a means of mental development, that industrial education is understood by the most enlightened of its advocates. They are well aware that to introduce a trade into the school is to degrade the school; that to take away from the young the time that should be dedicated to the elements of general culture and devote it to training them in a special aptitude, however useful later on, is to impair the humanity of the child. They desire nothing of this sort, and they ask that a workshop be connected with every school for no other reason than that a chemical laboratory is connected with every college.

There are thus two antagonistic parties whose watchword "industrial education" has alike become. The one seeks to make the mass of mankind more machine-like than they already are, though with the proviso that they shall be made more perfect machines, more skilful to increase wealth and to feed the channels of the manufacturer's profits. The other party, standing at the opposite pole of thought, seek rather to elevate the masses to more completely develop the humanity of the young, and look upon technical and art education in the school as a novel and admirable means for achieving this result. Since, then, the phrase "industrial education" is susceptible of interpretations so diverse and so incompatible with each other, it is in the interest at least of those who have the higher educational aim in view to make use of a less equivocal designation; and the phrase "the creative method" will henceforth be adopted by us.

Let me then endeavor to point out the application of the creative method in the school to the training of the intellect, to the development and refinement of the taste, to the formation of character. In respect to the training of the intellect, the bearing of the creative method on the study of geometry will be especially obvious. The work on which the pupil is engaged in the school workshop will make his conception of the fundamental geometrical relations unusually clear and distinct. The properties of a square, trapezoid, circle, ellipse, cube, cylinder, etc., will be more vividly realized by those who embody these forms than by those who only observe them. And if we remember that the geometrical forms are the key to the understanding of all forms whatsoever, we shall not underrate the importance of a perfect grasp of these forms by the youthful mind.

At the end of this article will be found an outline of the scheme of lessons projected for the school workshop. It will there be seen that the geometrical forms are produced by the pupils in different kinds of materials and with a considerable variety of tools; and that the difficulties of the technical work and of the mathematical knowledge involved advance as far as possible in parallel lines. What Froebel began in the Kindergarden is here carried out on a higher plane and with much greater minuteness of detail.

INTER-RELATION BETWEEN DRAWING AND TECHNICAL WORK.

Secondly, in the school workshop there is an intimate and constant connection between the drawing and the technical work. They are mutually complementary. The work is the concrete representation of the drawing, the drawing is the abstract representation of the work. It is well known how few workmen in the various trades are able to comprehend the abstract expression of form in a drawing so well as to translate it without the assistance of a model into the material at their command, or, conversely, to represent a material form, if it be at all of a complicated character, in a correct drawing. But this faculty, which is of such inestimable advantage to the workman, and the lack of which is the subject of so many complaints, should be a part of the mental equipment of every well educated person whether workman or not. No one can doubt that the language of form is one of those languages which every one should seek to master as being essential to the harmonious development of the mind; nor will it be gainsaid that the power of concretely expressing forms will give us a firmer mental hold upon the forms themselves.

Thirdly, the work of the pupils will aid them to a clearer understanding of the elementary facts of mechanics. The pupils will be taught to make parts of mechanism and will afterwards learn how these parts are put together. They will thus not only gain a more realizing knowledge of machines and their functions, but will also be led up to a better comprehension of the general laws and principles that underlie the action of machinery. Towards the end of the course they will be taught to cast in plaster of paris the most important parts of the steam engine.

Fourthly, a series of workshop lessons has been specially prepared for the purpose of supporting and, as it were, supplying a foundation for the teaching of natural philosophy. The pupils will as far as possible construct their own scientific apparatus.

TRAINING OF THE EYE AND THE HAND.

Parenthetically I would mention that the technical work of the pupils will be to them a gymnastic of the eye and hand. We hear much said concerning *mens sana in corpore sano*, and concerning the importance of making every member of the body, supple and pliable, every organ true and quick, so that the whole of our physical nature may be the ever ready and nimble servant of the soul. But how then does it come to pass that those two organs, the eye and the hand, which are the preferred messengers for carrying out the intentions of mind, should receive so little adequate discipline? To make good this deficiency, to secure a more perfect eye and hand training, and thus to carry forward the gymnastic art to its highest applications, the workshop in the school is needed. Who will deny that the future physician, the experimenter in every department of science, and indeed every one to whom a deft hand and keen powers of observation are important, will find such a preparatory discipline in early youth an inestimable advantage?

I have thus far spoken only of the value of the creative method for the culture of the intellect. But we who desire an "all sided" rather than a "one sided" development of the child must take into account the æsthetic and moral nature as well; only by the harmonious culture of all three can the larger humanity be perfected, and the creative method must show itself capable of giving a powerful stimulus in all these different directions if it would vindicate its title to the high significance which we are inclined to ascribe to it.

INFLUENCE IN DEVELOPING ARTISTIC APTITUDES.

Now it is easy to see that the production of beautiful forms by the pupil will tend to heighten his appreciation of what is beautiful, and to refine his taste. I here speak of the school atelier as I have before spoken of a school workshop. Both are equally needed to supplement the class rooms of the ordinary school. In the latter mechanical drawing is made the basis of instruction, and the work executed is the means of creating mathematical precision; in the former free-hand drawing is the basis, and the work done is the means of cultivating a sense of harmony and of beauty.

He says that some of the very young children have shown remarkable fondness and aptitude for artistic production, and proceeds to consider the possible influence and value of wide-spread elementary artistic training throughout all the schools of the country.

His words on this point are in full accord with the profession of faith in the value and far-reaching power of definite training in elementary forms and principles of art, as promulgated by the talented trio of educational pioneers and apostles, Walter Smith, Charles C. Perkins, John D. Philbrick, and their ardent associates in the great undertaking of introducing into the American public school, and indeed into the American conception of education, the idea that taste could be made a subject of education, could be developed by training; that the love of beauty, and the study and knowledge of how to produce objects of beauty, constituted a legitimate province of general education.

In these views he is in cordial sympathy with those great educators.

Speaking of the love of beauty thus early shown by these little children, he proceeds to picture in the following eloquent passages, the conditions on which alone it is possible to develop a great National Art. He sees clearly the truth that it is only when the whole people have knowledge and love for art that the coming of the great individual artists may be reasonably anticipated; for great artists like great orators spring from the throbbing heart of the people and can live only while sustained by their love and sympathy:

IMPORTANCE OF EARLY ART TRAINING TO THE NATION.

Let us consider what a promise is contained in this beginning, and what a benefit it would be if pupils in all schools could receive a similar education! How would art flourish anew if the slumbering art instincts of the masses of the people were awakened, and a public sentiment were formed favorable to and appreciative of the highest efforts of true art! For it is idle to expect that great artists will be formed in this country, or in any country, by schools and advantages for the few. The solitary artist must perish or deteriorate for lack of the congenial atmosphere in which alone he can live. The great artist is the rich ripe fruit of a whole people's art life; is the high crested wave that rises out of a whole sea of similar tendency and endowment. And not only would the public encouragement and understanding of the best art be fostered in school ateliers, but the faculty of adequately executing the ideas of a sculptor or an architect would thus be trained. The complaint is made that we have not in this country workmen who, like those of France, can enter sympathetically into the conception of an artist, feeling what he desires to express, and, in their subordinate capacity, contributing to the fine realization of his intentions. Can it excite surprise that this should be so, when we compare the pains which are taken with the art education of the people generally in France and the all but neglect into which this branch of education is suffered to fall amongst ourselves? The creative method has here, too, a great mission of reform to fulfil; and a fairer future will dawn for art in America when its principles shall be understood and recognized.

Then, after a few passages on the moral influence of this training upon the individual, he goes on to remark upon the development of a spirit of comradeship between the little ones, brought about by the methods of this school. On this point he says:

There are other incidental moral influences implied in the creative method. It leads to comradeship among the little workers. It allows of union of effort in the performance of those common tasks which are occasionally proposed to a whole class, when all the pupils combine to produce a common result and are alike interested in it because they have all contributed to its achievement. It leads to a willing recognition of superior merit in fellow workers, and a subordination of the less to the guidance of the more efficient. This indispensable element of a generous character, in which the generality of workmen are so sadly deficient, is inculcated by the appointment of the abler pupils of a class to be the helpers, the foremen as it were, of the less able.

Our author then, after a few words on the value of this training to all classes, proceeds to emphasize the importance to the so-called factory "hand" of such knowledge as will enable him to understand the relation which *his* particular piece of work bears to the completed whole; and so to take an intelligent interest in his daily occupation.

THE NEW EDUCATION VALUABLE TO ALL CLASSES OF CITIZENS.

Having thus passed in review some of the principal advantages which the system of education by production carries with it, it will readily be perceived that they are calculated to accrue to the children of the rich as well as the poor, to those who will later in life enter the professions as well as those who are destined for a trade, to those who will be merchants and scholars as well as those who will be compelled to do the hard physical labor of the world. But for the class last mentioned certain additional advantages will result from the method we have described; and a few words concerning these may not be amiss. I count among the peculiar benefits which the working class will reap from the introduction of the creative method into schools, first, the circumstance that, becoming possessed of superior skill, they will turn out superior work; that they will enhance the value of their country's manufactures in the great markets of competition, and will secure a larger share of the general wealth for themselves. But this pecuniary benefit, important as it is to the wage earning class, we distinctly refuse to recognise as the chief aim and end of work education, and we regard it as insignificant compared with a higher mental and moral good which superior training will place within reach of the future workmen.

OF SPECIAL VALUE TO WORKERS IN FACTORIES.

The worker in the factory of the present day too often moves like a machine among machines. He does not comprehend the wonderful processes which occur around him, and his mind is blunted and degraded by constant contact with operations of whose principles he is ignorant. Far otherwise would it be if he could be so far educated as to understand the nature of the material with which he deals, the laws which the gigantic forces that he utilizes obey; and if the mechanical contrivances amongst which he labors would become transparent to his eyes so as to reveal their underlying plan. The worker becomes truly independent then when he has intellectually mastered his work. And it is one of the fairest promises of the creative method that it will ultimately help to build up such intelligence, that it will give a new dignity to labor by putting more mind into it, and that it will saturate the daily toil of the masses of mankind with understanding.

He then considers the value of these new methods in furnishing varied opportunities to the children for the exhibition of capacity, a most important factor in determining the character of the child, as, in his summing up of the advantages of the system, he clearly shows:

PEDAGOGICAL FEATURES.

The leading features of the creative method have thus been delineated, and it only remains to add a number of minor points whose importance will be especially apparent to professional teachers.* The creative method will open a new avenue for exploring the individuality of the pupil. It will offer a new opportunity for the nature of the child to declare itself and to reveal its bias. The progress of all modern education is in the direction of greater individualization, and wise pedagogues will welcome any test of individuality as an invaluable help.

ALTERNATION OF EMPLOYMENT OF VALUE TO PUPILS.

The creative method affords a wholesome alternation between work and study, and thus provides an additional means of mental and bodily recreation. Change of occupation is often better than entire rest. When pupils shall pass from the class-room to the workshop or atelier, and from these back to the class-room, they will experience a new zest and relish for their school duties, and every faculty will become brighter and keener. It is a noteworthy fact that in England the results achieved in the half time schools, which are attended by factory children, are on an average as high as in the ordinary day schools. The work of the factory tends to quicken the observation, to concentrate the attention, and to stimulate the mental activity of those children, so that they learn in half time what others learn in full time. This experience may well serve to refute a persistent objection which the opponents of the improved methods of education are in the habit of urging; namely, that the young are already sufficiently burdened, and that it would be injurious to impose new loads upon their already overtaxed brains. The system of education by work will have no such tendency; on the contrary the exercise of their creative intellect will be a genuine refreshment for the young, and instead of imposing an additional load we shall in reality make all their other studies easier by the salutary influence which variety of occupation cannot fail to exert.

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* It should be noted that not all the pupils of the school are required to go through the entire course of technical and art instruction which has been marked out. Those who, after a prolonged trial, show themselves to be hopelessly incapacitated in either direction are dropped from the course, and the main stress of their education is laid on other studies. In our own experience, though we are dealing with the poorest class, the list of incapable pupils, as compared with the total number, is small.

IT AROUSES THE SLUMBERING FACULTIES OF THE CHILD.

Furthermore, the creative method often affords us the means of rescuing an individual life that seems already past redemption. It is necessary to the mental health of adults, and deeply important in the education of children, that they should be able to do some one thing thoroughly well. The being able to do one thing well is the starting point for doing other things well. Now it happens not infrequently that children, and especially those whose memory is weak, fall hopelessly behindhand in the ordinary branches of a public school course. In consequence they are set down as dunces, and hearing this opinion constantly repeated by others, they gradually adopt it themselves, and settle down to the conviction of their stupidity, and fall into a dull, brooding condition from which they may never emerge. Cases of such children have occurred in the Workingman's School. But what a change was observed in these very children when they were taken into the school workshop! They happened to be exceptionally endowed with manual skill; in the workshop they easily performed the tasks set them, and even excelled their fellow-pupils. As a consequence their crushed self-respect re-arose, their attitude became manlier, their look more confident—they had done one thing well; and this gave a favorable turn to their whole development, and a new impulse to their exertions in every direction. It is assuredly no slight argument in favor of the creative method that it affords us the means of building up the self-respect of children who are mentally backward, and thus furnishes a point where the lever may be applied in order to raise their entire intellectual status.

* * * * * * *

He thus proclaims the comprehensive purpose of the new system in his final sentence:

The purpose of the creative method is to build up a more complete humanity in the young. The total humanity of the child is the ideal aim; and in the interest of no base or mercenary end, but of this highest spiritual purpose, the school workshop and atelier are demanded. Over their portals should be inscribed:

"Sacred to the larger Humanity."*

FELIX ADLER.

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* The note, filling some three pages which here follow in the pamphlet, gives a general view of the courses of study. This has been modified, as already stated, in the programmes sent to the writer in 1887, which will here follow the extracts given from Principal Bamberger's report. The first section of the note describes the "Parents' Meeting," held monthly in the school building. The second paragraph, as it gives a most interesting insight into the completeness of the methods used to develop the varied faculties of the poor tenement-house children who attend the school, is here quoted:

"A second measure was found necessary to facilitate the working of the system. In teaching natural history it became evident that many of our pupils, taken as they were from the tenement-houses of New York, did not possess those elementary impressions of nature upon which, as a foundation, the instructor must build. We arranged, therefore, to send out a vacation-colony into some picturesque district of

THE WORKINGMAN'S SCHOOL.

PRINCIPAL'S REPORT. (January 1st, 1883.)

To Professor FELIX ADLER,
Director of the Workingman's School:

SIR: I have the honor to submit the following biennial report:

The class entering from the Kindergarten is Class VIII in the school. By the promotion of new classes annually from the Kindergarten, and by accessions to some extent from without, the school has increased from two classes and 51 pupils in 1881, to four classes and 144 pupils at the date of this report. There are to be eight classes in all. The general health of the pupils during the last two years has continued good, despite the disadvantage of insufficient accommodation. The regular visits of Dr. Wiener are of great service. In addition, care is taken that the children shall not suffer from wet feet or insufficient clothing; the noon lunch is continued for the two lower classes; the class-rooms are aired at the noon recess, and short periods of rest or exercise are allowed between recitations.

The personal appearance of the pupils has also received special attention. Ordinarily, discipline and instruction so engross the teacher's attention that untidiness in dress or person may pass unnoticed, or if corrected, recurs through lack of systematic oversight. * * *

The staff of teachers at present numbers six. The school also has the benefit of special lessons given by three ladies who volunteer their services. There is one normal pupil, and in the new building it is expected that others will be received.

Two weeks of out-door life on a farm in the country, and the wealth of incident attending the journey thither mark a joyful epoch never to be forgotten by the children. The teachers' work also feels the impulse. Natural history acquires new meaning in the fields and woods. Experiences there are often the best commentary on many points of lessons in the succeeding year. During the children's first visit to the country Mr. Parsons kindly assisted the Principal in superintending them. He also furnished them railroad tickets each year. Farms in Sherman, Wayne County, Penn., have been the children's homes for two summers, where they remained from July 5 to 19 inclusive, both in 1881 and 1882. This is a benefaction of such deep delight to the children, and so marked in its results, that it deserves to be specially recorded. * * *

The Principal urges the procuring of a collection of books for a school library as most desirable in the promotion of a fondness for reading; he describes the monthly evening meeting of the parents at the school-room, when the methods of instruction and the work of the children are shown and explained. In this way the interest of the parents in the school, and their co-operation at home, are secured. The general good conduct of the children and their kindness to each other is spoken of, and the recent opening of a children's saving bank after the German plan is noted. The literary and general studies are then described.

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country, and selected the little town of Sherman, in Pennsylvania, for this purpose. Thither, for several years in succession, almost the entire school has gone in charge of the Principal. And there in the woods, and among the hills, and along the streams, they have gained not only new health and vigor, but also that more vivid realization of natural objects which will contribute greatly to enhance the value of their winter's study."

METHODS OF INSTRUCTION.

It remains to note briefly the methods used in teaching the various branches of study. Beginners in reading and writing are taught by what may be termed an analytic-synthetic method. A word is broken into its elements, and these are taught by sound and written by children in script. * * *

Writing, considered as penmanship, is taught specially in classes above the VIII. The children from the start will use paper instead of slates, writing on the latter having been found to affect the eyes injuriously. The slate-pencil, also, is too clumsy, and requires a pressure difficult to moderate when exchanged later for the pencil and pen.

For beginners in arithmetic, a supplement to the numeral frame has been devised by the Principal, in the shape of little numbered blocks of two sizes for tens and units. By means of these the children are kept individually active, a desirable change from using the eye only in following together the movements of balls on a numeral frame.

Grammar, of course in its elements, is begun in Class VI. English and German grammar are taught in parallel courses, with frequent comparison. Composition is taught as an art; practice under the teacher's personal direction is the method followed. Little pieces, but complete in meaning, are produced by the pupils, in narrative and descriptive forms. In the description of places and objects, the aim is to bring out the essential features. Letter-writing is given special attention.

The fears that were entertained as to the slowness of the method in geography, by which one year is spent on the City, another year on the State, have disappeared. It has been found that, in the next year the children are able to master all of the United States, and draw the maps. It is expected that a complete common-school course in geography will be finished the fifth year after beginning the study.

History and geography, it is often said, should be taught together. There is a sense in which this is true; but the danger is that the connection will be made a disorderly mixture, to the end that neither is taught well. The following connection is proposed: Geography and history shall be taught separately at first, the map in geography being made to grow on the blackboard from day to day, as new features are added to the simple outline. Then in review, and associated with map drawing, the appropriate points from the regular history lessons shall be recalled, and not only events indicated, but their historical movement and sequence be made to appear, the children tracing them in colored lines on their maps.

COMPREHENSIVE INSTRUCTION IN NATURAL HISTORY.

Natural history, once quite neglected in common schools, has within the last decade received increasing attention. It is still, however, rarely taught with anything like the care it deserves. There is considerable difficulty in adapting this subject to the younger children. The field is so vast, there is danger of attempting too much, and of entering too many paths. Diesterweg, Kahr and Lüben saw this, and sought to overcome the difficulty; but their books for beginners adopt a highly scientific division, and deal much with kingdoms, classes and orders. It is first essential rather that the point of contact with child life be found. It should be shown how nature enters into his daily concerns, and those of life around him. With these views Mr. Black has arranged a course of object lessons for beginners in natural history. Graphical representation is resorted to. The various sciences—as zoölogy, botany and mineralogy—are represented by circles. In the course beginning with bread, children from six to seven become acquainted with the different grains, in the forms of flour, seed and growing plants, and thus botany is introduced; also with the peculiarities of sand, clay and chalk in soils, the beginnings of mineralogy. Then they follow the processes of plowing, sowing, reaping, milling, and end by baking bread, having prepared it with their own hands. In other courses, as those starting with milk, the eggs and wool, the domestic animals are studied, and a beginning in zoölogy is made. Botany is again reached in the study of the different woods and timber trees used in building; and mineralogy is continued in the slate, limestone, sandstone, brick, etc., to be seen in house construction.

Two hours a week, for two years, are spent in this way, the lessons of the first year dealing with the requisites of food and clothing; of the second year with the requisites of shelter and transportation. In the third year the transition is made to the classification and generalizing of the text-books, a naturally directed observation having by this time furnished material for classification. Zoölogy, botany, mineralogy, may now be taught independently, for the pupil has seen their connection with each other and his own concerns.

EXPERIMENTAL SCHEME OF WORK INSTRUCTION.

In work instruction, wherein lies perhaps the chief distinctive characteristic of the school, the end sought has been from the first clearly seen. But for means and methods, the only recourse was to experiment. Nowhere were there manuals of work instruction as here desired, much less models of successful experience. As the experiments progressed, the way became clearer. A series of workshop lessons for the three lower classes, proposed by the Principal, was tried and proved successful, and a complete plan for the entire school course, embracing the lessons already introduced, has now been worked out by Mr. Bristol, who has been engaged specially to take charge of the work instruction and mechanical drawing. This plan, revised in harmony with the rest of the school course, has been adopted provisionally, and is appended in full below.

What wood and metal work are to boys, needle-work may be to girls. Accordingly, systematic instruction in sewing is provided for all classes, and above Class VI becomes the sole share of the girls in the mechanical work instruction. The course includes not only sewing and mending, but also knitting and cutting. As a last result of instruction in drawing, the girls will not alone execute, but design patterns, for the finer kinds of needle-work.

VALUE OF MUSIC TEACHING.

Music, in early years especially, is much more than a charm to the ear. By it the moods of children are powerfully influenced. Constraint gives way to freedom, heaviness to joy, when a familiar strain is heard or sung.

CALISTHENICS.

In calisthenics three things are of importance: that the body get sufficient exercise; that the will be trained to instant obedience; and that the social instinct be cultivated. The child shall feel himself a needed part in a circle it were wrong to break. Nothing so promotes this feeling in children as suitable games, and accordingly they are an essential feature of our calisthenic instruction.

At present Mr. Maetzner, of the New York Turn Schule, kindly gives his services for the noon hour after lunch, on Thursdays and Fridays, and directs the children in their games and exercises.

GENERAL COMMENTS BY THE PRINCIPAL.

I conclude with a few words on the general influence of the most distinctive features of our school, namely, its work and art instruction. I have found that pupils who are very backward in their studies, and consequently fall into great discouragement, sometimes display decided talent in technical and art work. The school that is founded on the "creative method" rescues such lives, that would otherwise be lost. The public schools, as they are at present, can hardly exert this saving influence. They encourage and praise those pupils only who have yielded to a certain discipline, or obtained high percentages in their studies. The mind is estimated in figures, just as a merchant estimates his wares; and a child who has obtained a high percentage is apt to regard a less successful one with the same contempt a rich man often evinces toward his poorer neighbor. How unjust is this estimate; how false such pride! How often are these high percentage pupils sadly disappointed to find their "perfection" avail them so little in after life! Of worse influence still are the reprimands and degradations which a less fortunate pupil often receives. For years he remembers with ill-feeling the ever-scolding teacher; and envy fills his heart toward his successful comrade. If, in spite of his "imperfection" at school, he becomes a successful tradesman or workman, he will forever despise so-called book-learning.

A very important influence of work on the youthful workman remains to be mentioned. In the work-room the pupil who is superior in ordinary branches of study works side by side with his less proficient classmate, and as work, patience and attention not seldom throw book knowledge into the shade, the wholesome conviction is thus forced upon him that, in his own way, every one can accomplish something excellent.

Are there not here powerful influences to strengthen character? Respect for real worth, not for appearances, is thus inculcated, if not by moralizing, yet none the less forcibly by deed and example.

Respectfully,

G. BAMBERGER,
Principal.

The succeeding fifty-five pages of the pamphlet are taken up with the "Details of exercises in Drawing and Work Instruction," which constitute the report of Mr. Bristol, the master in this department of the school. Each one of the problems given is illustrated; there are several examples for the construction work in paper, such as was shown in the exhibition of the industrial work of the public schools of Washington, D. C., in 1888, and as was introduced by Mr. Hunster in the colored schools of Washington as long ago as 1877, as stated in Chapter XVI of the present volume.

It was in reference to this series of exercises designed by Mr. Bristol that Professor Adler wrote as follows in the note appended to his article in the Princeton Review already quoted from:

> The chief practical difficulty in carrying out the plan of the school was found to consist in formulating a series of workshop lessons whose value should be educational.
>
> Numerous attempts at so-called industrial education have been made both in this country and abroad, but to our knowledge they are for the most part aimless, incoherent and lacking in system. There are thousands of manual occupations from which a selection must be made, and of these now one kind, then another, has been chosen for introduction into the school (printing, carpentry, basket-making, and the like), without much rhyme or reason in the choice. What is needed is a principle of selections which shall organically connect the work instruction with the remaining branches. It seemed to the writer that such a principle of selection might be found in the drawing course in both its departments: mechanical drawing to be the basis of instruction in the workshop, and free-hand drawing the basis of work in the atelier. In the department of art instruction the realization of this idea seems com-

paratively easy; in the department of technical instruction the difficulty is much greater. An attempt to solve it has, however, been made, and a scheme of workshop lessons projected for and partly carried out in the school. The board of managers of the school are not committed to all the details of the plan, which will continue to be modified as the experiment proceeds. But the scheme will show at least the lines along which we hope to advance toward our goal.

It consists of a series of exercises so arranged that the different tools and materials of construction employed are successively introduced according to the ages and abilities of the pupils, so that the actual practice necessary for the skilful manipulation of the tools may be given simultaneously with an education of the mind.

The following is the summary of the courses in drawing and elementary industrial training in the Workingman's School already referred to as furnished for the present Report in 1887, by the Director and Principal of the school:

MANUAL TRAINING METHODS IN USE IN THE WORKINGMAN'S SCHOOL IN 1887.

Pupils of the lowest classes work in clay, using compasses, rulers and blunt knives: they draw upon the clay, and afterwards cut out, the simple plane figures, acquiring in this way the elementary ideas of geometrical forms. Pupils next above these grades use pasteboard as material, and sharp knives, awls, etc., as tools. The work consists of a series of exercises in stereography, the various geometrical solids being drawn in flat projection, and afterwards folded up and glued into shape. Passing above this grade, pupils next work in flat wood, using the necessary tools, including the bracket-saw. Mensuration of areas is taught by this means. Next above this comes a series of exercises upon geometrical solids, which are constructed from blocks of wood, those having plane faces being made in the mitre-box, and those having curved faces on the lathe. Calculation of volumes is taught in this part of the course. For the higher classes, the exercises consist of lessons in making joints, and the elementary study of strains, followed by practice in casting and working metal, and closing with the construction of a small steam-engine. At every stage of the course, the nature and limitations of the materials used, the capacities of the tools employed, and the physical and mathematical properties of the objects constructed, are impressed upon the mind of the pupil, and a firm foundation is thus laid for the future study of the natural sciences, and an intelligent understanding of abstract mathematics. Mechanical drawing accompanies the work of the shop throughout the entire course. Nothing is made until it has first been drawn, and the pupil, when he begins his construction, has thus a clear idea of what he intends to produce. The educational equivalents of our workshop instruction may therefore be summarized as follows:—practice of eye and hand, illustrative value in the teaching of geometry and physics, important influence on character.

HOW PHYSICS ARE TAUGHT.

In the study of physics, pupils construct their own apparatus in the shop, and thus are placed in the attitude of original investigators into the phenomena of nature, the leadership of the teacher serving to prevent waste of effort, by turning their inquiries in the right direction. The apparatus is simple in character, and easily made. Pupils perform every experiment themselves. They note down in their copy-books what they have observed, they draw deductions from these observations and are thus led to formulate the elementary laws of nature in their own language. It need scarcely be pointed out that this method of teaching physics is an advance upon the old so-called experimental method, in which the demonstration is left entirely to the teacher.

HOW TO ADAPT THE NEW METHODS TO THE NEEDS OF THE GIRLS.

How shall the benefits of mechanical work be applied to girls? This has long been a serious question for the practical educator. Girls have not sufficient muscular strength to do the heavier work in wood and metal which is assigned to the boys. Some other variety of work must be found, which will possess the same educational equivalents, and also be adapted to the slighter physical organization of young girls. In the Workingman's School, the cutting and fitting of garments, from measure has been introduced for this purpose. The pattern for the garment is drafted from dimensions taken, and the garment itself is afterwards made and fitted upon one of the class. The results thus far have been satisfactory.

Original ornamental designing is also taught to girls of higher classes. The designs, when drawn are executed usually in some sort of fabric, but occasionally in clay. Remarkably creditable work has been done in this department, by a number of the pupils.

THE WORK UNDERTAKEN FOR ITS PEDAGOGICAL VALUE.

It will be observed that this course differs radically from what is usually understood by industrial work in schools. With the industrial school, in the ordinary acceptation, the Workingman's School has nothing in common. The effect of the former can only be to turn the mind of the pupil in one or another special direction, while it is the fundamental idea of the latter that no such bias should be given, but rather a complete and equal development of every faculty. This cannot be reached by the random method of introducing one or two branches of mechanical work into a school as has in some instances been done. Without systematic gradation, and organic connection with the regular work of the class-room, all such attempts are not only useless, but positively harmful, not only to the pupil himself, whose individuality is not respected, but also to the cause of rational education, upon which they tend to bring discredit.

INFLUENCE ON MORALS.

The moral effect of systematic mechanical work, upon the mind of a child, is one of its strongest recommendations. Seeing the immediate results of his work before him, tends to make the pupil love work for its own sake, and thus favors the growth of habits of industry, one of the surest preventives of vice. The child, moreover, learns to appreciate the value of rightness in his work. A single deviation from the straight line mars the entire result. Everything must be true, in order to be perfect. But the True in the realm of matter is the analogue of the True in the moral realm. The sense of rightness, translated into terms of human conduct, becomes the sense of righteousness. An appreciation of æsthetic properties in objects is also cultivated, the harmony pervading the natural world is made manifest, and this is favorable to the development of a sense of the harmony that should prevail in human relations, which, if realized, would be the fulfilling of the moral law. Among the numerous incidental moral advantages may be mentioned the development of a feeling of comradeship between teacher and class, and between the members of the class themselves. Co-operation in their work begets a mutual helpfulness, and arouses the sentiment of solidarity, in the absence of which all moral teaching falls upon deaf ears.

DEVELOPS SELF-RESPECT AND MANLINESS.

It frequently happens that pupils who are backward and dull in literary studies show surprising aptness in the workshop. Such pupils, in the ordinary school, would be set down as dunces, and would finally grow to acquiesce in this opinion themselves. The workshop offers a means of redeeming such children, by restoring their self-respect, and thus saves them at the critical point of their lives.

The following are the lists of Trustees, Officers and Teachers in January, 1882, as given in the pamphlet:

BOARD OF TRUSTEES OF THE UNITED RELIEF WORKS S. E. C., 1882.

President, ex-officio, Professor **FELIX ADLER**;
Vice-President, **MAX BLEBER**, Esq.;
Secretary, **LEO. G. ROSENBLATT**, Esq.;
Treasurer, **SAMUEL STINER**, Esq.;
Secretary of Schools, **ALFRED R. WOLFF**, Esq.;
Secretary of District Nurs. Department, Dr. **RICHARD G. WIENER**,
and

Mr. **SIGMUND D. ROSENBAUM**,
Mr. **THEODORE ALTSCHUL**.
Mr. **SOLOMON ROTHFELD**,
Mr. **A. FRANKFIELD**,
Mr. **SIMON AUB**,
Mr. **ALEXANDER SCHLÜSSEL**.

DIRECTOR OF THE WORKINGMAN'S SCHOOL:

Professor **FELIX ADLER**.

EXECUTIVE COMMITTEE:

Mr. **OLIN S. WARNER**,
Mr. **DOUGLAS VOLK**,
Dr. **MARY PUTNAM JACOBI**,
Mr. **H. J. SCHWARZMANN**,
Prof. **JAMES E. DENTON**,
Prof. **H. J. STRAIGHT**,
Mr. **ALFRED R. WOLFF**, Secretary.

TEACHERS:

Principal, Mr. **G. BAMBERGER**.

Class VI, Miss **ALICE SPEAR**.
Class VII, Miss **MINNIE SPEAR**.
Class VIII, Mr. **GEORGE A. BLACK**.
Special Teacher, Class VII (History and Geography), Miss **JOSEPHINE LAZARUS**.
Teacher of the Workshop, Mr. **W. H. BRISTOL**.
Teacher of Free-hand Drawing, Miss **L. FERY**.
Teacher of Modelling, Mrs. **C. V. SANBORN**.
Teacher of Vocal Music, Mrs. **CLARK**.
Teacher of Calisthenics, Mr. **A. MAETZNER**, Superintendent of the New York Turn-Schule.
Teacher of Sewing, Miss **A. DAHLBENDER**.

The following lists of the names of the Executive Committee having supervision of the school; and of the Instructors of the several classes, with the statistics of attendance on both the Workingman's School and the Free Kindergarten, received only in time to append to this chapter, were enclosed in a note from Principal Rickoff dated

January 16, 1889, and comprise the only information of recent date, at my command.

The Workingman's School and Free Kindergarten, 109 West Fifty-fourth Street, New York City.

Officers and Teachers, 1888–89.

Director of the Workingman's School:

Professor Felix Adler.

Executive Committee:

Professor Felix Adler, Chairman,
Professor James E. Denton,
Dr. I. Adler,
Walter Shirlaw,
Dr. Ernest Schottky,
Dr. M. Alsberg.

Teachers:

Principal, Andrew J. Rickoff.

Classes I, II, III, IV, V.
  G. Bamberger, German, Geography, History.
  W. H. Snyder, Natural Sciences.
  F. Seringhaus, Mathematics, Music.
  Miss Susanne E. Hoyte, English.
  Joseph T. Bedford, Shopwork, Mechanical Drawing, Geometry.
  Mrs. J. Pepper, Sewing.
Miss Clara Wilson, Design.
G. T. Tobin, Drawing.
Class VI, Miss A. S. Lee.
Class VII, Mrs. Kate M. Conrad.
Class VIII, Miss Emma D. Simpson, Penmanship for Classes I, II, III, IV, V.

Miss C. T. Haven, Principal Kindergarten.

There are in the school 123 boys and 140 girls, a total of 263. In the Kindergarten there is an attendance of 94.

APPENDICES.

APPENDICES.

GENERAL INTRODUCTION.

In arranging the materials contained in this Report it became expedient to modify the original plan even more than was indicated in Chapter IV, page 38 of this volume, and to give Part II almost wholly to matters relating to the Public Schools; so rapid and widespread has become the development of the Industrial Education movement throughout the country.

How rapid and important has been this movement for introducing some form of industrial training in all public schools is indicated by the fact that while, as first planned, there was no intention of giving any space in this volume to matters directly relating to the Public Schools, they having been so fully considered in Part I, the whole of this volume is now practically given to matters directly relating to them.

This change in the contents of the volume leads, of necessity, to similar changes in the contents and arrangement of the Appendices, which have been prepared and arranged with similar reference to the plan of the present volume as were those of the preceding volume to its contents; the intention being to bring together all accessible material, from American and foreign authorities, bearing upon these industrial educational movements and the problems connected with them, which may be of service to all Educators and Educational Officials. The aim has been fullness and variety, rather than mere conciseness. To give original papers and the opinions of others, rather than the abstracts of their opinions, as, perhaps, warped by those of the editor.

The Appendices have been arranged in their logical order, rather than in the order in which they are referred to in the body of the book; some of them, it may chance, not being there referred to at all!

The papers relating to the theory and purpose of the Common Schools come first in order of precedence; followed by those on the Kindergarten, including the notable address by Cardinal Wiseman. These are followed by an Appendix containing such papers as are referred to in course of the first two hundred pages of the volume, which were stereotyped before this movement had assumed its present proportions, and relate to: the art adorning of school rooms; the experiments by Mr. Leland in teaching the minor arts to public school children; a mechanics' suggestion in reference to self-education; and the interesting report on "Trade Schools" by the United States minister to Switzerland. The Lecture by the Cardinal, and the papers relating to the artistic adornment of school rooms, bear the close relation to the art development of the public school children, to that awakening of the art instinct in their minds, and to that training in elementary knowledge of form and color, to effect which was the chief purpose of those who originated the introduction of Industrial Art Drawing in the public schools.

Several of the Appendices which immediately follow, (L to P inclusive), relate wholly to the industrial development of the new movement, which was also comprised in the system of Walter Smith; but in that system it was the application of Art to the industries which was the leading motive.

In the present movement for a more "practical" course in the public schools it is quite apparent that any idea of art instruction, if it exist at all, in the minds of many of the most active promoters of the industrial movement, is entirely subordinated and secondary to the industrial processes which are to be taught. It is only as an aid to acquiring a knowledge of those practical processes that Drawing is held of any account; but fortunately, they can not be properly or thoroughly taught without thorough grounding in drawing; and so, though the Art Ideal, which is by far the more valuable part of the educational worth and influence of this study, is by many disesteemed, it can not be entirely ignored.

In the material relating to this new movement will be found papers on the various phases of Industrial Education by leading American Educators; papers on similar topics by leading English Educators; reports of discussions by American Educators and of like discussions by English Educators; accounts of the practical education of women in Great Britain and in the Continental countries; extracts from American Educational Official Reports; an abstract of a recent work on Manual Training by a Swiss Educator, etc. These make up the sum of the Appendices which relate directly to this industrial phase of public school education.

The purpose being, in offering this collection of historical matter and authoritative discussions of the topics relating to all grades and phases of elementary industrial training for pupils of either sex in the public schools,—from the Kindergarten and Kitchen Garden games and employments, to the Cooking classes and Manual Training School Shops;—to place in the hands of the reader a comprehensive collection of the most authoritative utterances, favorable or adverse, concerning the various subjects considered.

It is believed that, in the varied material here collected, all the many phases of these topics relating to Industrial Education, which are at present exciting so much of interest and effort the world over, will be found illustrated; and that the information here brought together from so many sources may prove to be not only of immediate interest and use, but to possess somewhat of permanent value.

It is hoped, therefore, that in these Appendices devoted to the Public Schools, there will be found sufficient material and of such character as to satisfactorily supply the needs of those desiring to thoroughly investigate the related topics properly included in any consideration of the proposed introduction of the various classes and grades of Industrial Education in the Free Public Common Schools throughout the United States.

A brief Appendix containing papers showing something of the present status of Drawing in the schools of the country follows.

As each Appendix will have a special introduction, it is not necessary to further particularize here. In general terms, the purpose of the Appendices of this Report may be defined as that of a store-house, wherein facts and arguments are gathered for the use of all educators. It is hoped that they may satisfy the judgment and meet the needs of their users.

APPENDIX I.

PAPERS

RELATING TO THE

THEORY AND PURPOSE

OF THE

AMERICAN FREE PUBLIC COMMON SCHOOLS.

I. Introduction.
II. Extracts from the Annual Reports of the State Board of Education of Massachusetts, and of those made by Horace Mann, as Secretary of the Board, (1837–1848).
III. "The Normal School in the United States," by Rev. A. D. Mayo. (1887.)
IV. "The Common Schools of America the Life of the Republic;" from an address by Hon. Chauncey M. Depew, LL. D. (1888.)
V. "Common Schools," by Rev. Horace Bushnell, D. D. (1853.)
VI. "Do the Public Schools educate children beyond the position which they must occupy in life?" by Wm. T. Harris, LL. D. (1882.)
VII. "Facts *versus* Theories," as shown by the records kept for twenty years by the Principal of a High School, giving the subsequent occupations pursued by the graduates, by H. C. Missimer, Erie, Pennsylvania. (1888.)
VIII. An Indictment against the system of Free Common Schools of the United States based on alleged violation of the rights of the citizen as tax payer and parent; and, further, as a system whose results are subversive of Individual Liberty and Development. Drawn in 1888, by John M. Bonham, Esq., and included in a work entitled "Industrial Liberty."
IX. Mr. Bonham's "Indictment and Criticisms" considered, by I. Edwards Clarke.

I.

INTRODUCTION.

The papers here grouped all relate more or less directly to the American Free Common Schools.

As the existence of the free common schools throughout all the States and Territories of these United States is an essential preliminary to the adoption of any general plan of education in such schools, and as, in their present form, they were founded by direct, purposeful effort, in the face of serious and long continued opposition, and can only be preserved by continual vigilance and intelligent support; and as, at the present time, a large class of adopted citizens are continually urged not to permit their children to attend these American free common schools, while, in all large towns and cities, a powerful church busies itself in erecting imposing sectarian school buildings, in which to receive the children thus diverted from the public schools; and while, in addition to this powerful and enduring opposition, there also arises, sporadically, another class of opponents, who either deny the right of the State to levy taxes for schools, or, who insist that this free school education must be confined to the narrowest limits, I have thought it proper, and timely, to place at the beginning of these Appendices, the impregnable arguments on which the establishment, support, and fullest development of the American system of free common schools of the people are based.

These arguments have never been more frankly, forcibly, or nobly stated than in the series of Reports made in his capacity as Secretary of the Massachusetts State Board of Education, by the late Horace Mann, of blessed memory; therefore, as the volumes containing them have been long out of print, and are inaccessible to most readers, I have quoted largely from his admirable reports; which can never become obsolete so long as the desire for freedom and knowledge inspires the hearts of a people.

To keep the common schools up to such a standard of excellence and usefulness, as shall make it evident to all that they may give to the children of the people a better preparation for their after life than can be obtained in any other schools, is the only sure and wise way of disarming opposition, and should be the one purpose cherished by all American educators. The justification of the schools must be found in the character of the scholars they have trained.

The paper on the Normal Schools, which follows, is from the pen of a leading educational writer of to-day. Dr. Mayo, in this admirable statement, traces concisely the efforts of Horace Mann, and shows his place in educational history as pre-eminent among the founders of the free common schools of the United States as they exist to-day.

The brief extracts from a recent address by the Hon. Chauncey M. Depew are here given as showing that to-day, as from the days of George Washington, in whose memory this address was delivered, thoughtful public men turn with confidence to the free common schools of the country as furnishing the surest guarantees for the safety and continuance of the Republic.

The extracts from the very remarkable prophetic words, spoken by the late distinguished New England Divine nearly a half century ago, are given because they are even more timely to-day than when first spoken. No thoughtful American can read them without gaining a renewed sense of the vast importance to Liberty that these autochthonous American institutions shall be preserved in all the simplicity of their democratic origin.

Since it might be urged that some of these papers in this Appendix belong to a past era, and that the wonderful industrial advancement of the present day had made them obsolete, the paper by Dr. Harris, one of the most experienced and advanced educators of the day, is added. The distinguished success of Dr. Harris, when Superintendent of the City Schools of Saint Louis, Missouri, in organizing the school system of that city, is well known among educators. His high rank as a thinker and author is generally conceded.

It will be seen in the extracts here given, that while he is fully informed as to the needs of the present, and is intelligent in regard to the changes resulting from new discoveries and inventions, and aware of the criticism to which the schools are subjected, he recognizes, as clearly as did those elder authorities here quoted, the vital relations that exist between the common schools and the prosperity of the Republic.

The theory of the friends of Education as held in the light of the present day of scientific progress, the age of steam and of electricity, having been so well stated by Dr. Harris, the report of Mr. Missimer, the Principal of a High School in the City of Erie, Pennsylvania, with its careful statistics, covering nearly a quarter of a century, and showing the subsequent employments of the pupils who have attended the Erie High School, follows. In the facts given in this report will be found a most conclusive confutation of the pessimistic theories advanced by those opponents of "High Schools," and indeed of all public schools, who persist in the assertion that these schools educate their pupils away from the useful employments. It is to be hoped that similar statistics may hereafter be kept by all High-School authorities, so that the facts may be known for the whole country.

The concluding paper of this Appendix contains one of the most recent statements of the grounds on which the whole system of public schools in the United States is opposed by a class of political economists and philosophers. This paper comprises a chapter of a notable book entitled "Industrial Liberty," by John M. Bonham, which was published in 1888. The entire chapter in which the author treats of the public school system is given. The theories and promises of Horace Mann are examined by this author, and a judgment of failure is passed upon the great experiment begun by Mr. Mann a half century or so ago in Massachusetts.

The conclusions reached by this author and the grounds upon which he bases his adverse decisions are subsequently considered in detail. With this final paper of the Appendix, the general topic of the American free public schools is concluded, as it is believed that in these compilations both parties to this controversy have here been fairly represented by some of their ablest advocates. The question as to the support and continuance of the Free Common Schools of the United States may confidently be remitted by the advocates of popular education to the Jury of their Countrymen.

II.

FREE PUBLIC SCHOOLS ESSENTIAL TO THE EXISTENCE OF A FREE REPUBLIC.

INTRODUCTORY TO EXTRACTS FROM SOME OF HORACE MANN'S ANNUAL REPORTS AS SECRETARY OF THE STATE BOARD OF EDUCATION OF MASSACHUSETTS* (1837–1848).

Nearly forty years ago Horace Mann, the great apostle and expounder of common school education in the State of Massachusetts, having been elected to Congress to fill the unexpired term of the recently deceased Ex-President John Quincy Adams, published his final report as Secretary of the State Board of Education.

The history of his struggles and successes during the twelve years of his Secretaryship is known of all men, for the influence of his devoted labors has never ceased.

The principles for which he contended, the improvements he initiated, underlie, animate and pervade, the school systems of all the States. Over the immense territory of the United States the beneficent impulse of his self-denying labors, of his far-sighted wisdom, is felt.

The State of Massachusetts, in grateful commemoration of his inestimable services, long since placed a portrait statue, in bronze, of this great educator, in front of the main entrance to the State House, that, with its gilded dome, crowns Beacon Hill in Boston. Side by side, in equal honor, stands the statue of Daniel Webster, the great expounder of the Constitution of the United States, himself the great educator of the people in fidelity to the principles of this Union.

It is not without significance that these two citizens, from all the long roll of her distinguished sons, have thus been chosen for honor; so that whoever, citizen or stranger, now seeks to enter this People's temple of Legislation and Justice, must pass between these two memorial statues, which recall the men who, more than all others, represent the fundamental principles — the two pillars — on which must ever rest the prosperity of Republics; namely, the universal intelligence of all citizens, and their obedience to, and support of, the Constitution and Laws. For the word "Republic" is but a synonym for that form of the government of a country under which the people enjoy all the rights of constitutional liberty, intelligently understood and loyally sustained.

Horace Mann saw, as most thoughtful men have seen, that, whatever might be the case under other forms of government, there was no possible security for a Republic except in the intelligence, virtue and self-control of the large body of its citizens. He also saw clearly that the only possible way to insure such common intelligence was the establishment of Free Public Schools; in which *all* the children of the people, should have equal opportunities of being taught. His life-long effort, therefore, was to multiply, improve, elevate, and make ever more efficient, these schools of the people. It is owing to this constant desire of his to improve the schools, to his belief in their future development and in the varied possibilities of child education, which makes his words as vital and inspiring to-day as they were when first spoken.

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* See note to page 20 of this volume.

Strange as it may seem, this fundamental, nay, axiomatic proposition, that free public schools are essential to Republics, is, even at this late day, called in question. The duty and the right of a government to tax its citizens for such free schools being sometimes denied; while, in addition to those who thus oppose the principle of free public schools, there has arisen a class of critics of the schools themselves, who, magnifying certain shortcomings proceed therefore to denounce the education given in the public schools as worse than useless; in which denunciation they are joined by a large number of religionists who denounce them as harmful in the highest degree, and who oppose the schools, because in this Republic, in which all citizens are free to worship according to whatever religious faith they may profess, the schools do not inculcate the tenets of one particular branch of the Christian Church!

Now this present Report has been made partly in response to the reasonable criticisms of those who urge that the former educational methods of the public schools do not adequately meet the needs of the present day; and in the belief that improvement is always possible, and with the purpose and hope of bringing together such a collection of facts,—the results of educational experiments in this and other countries,—as may contribute to the wise development of the public schools in such desirable directions; without, however, jeopardizing or losing those virtues of the old education which have so abundantly justified themselves.

In all this din about practical education there may be some danger lest the nobler part of education be forgotten; some modern scientists seem to delight in denouncing all the past, in pushing down the ladders by which they have scaled the heights, and in valuing nothing as educational which has not an obvious and direct bearing on the practical work of life; or, in aiding directly in the prosecution of their narrow specialties.

In view, then, of the resurrected, unrepublican arguments against the public schools; of the enduring opposition to them, by certain religionists; and, of this new criticism, which would eliminate everything from education not of immediate practical value,—that is, because of the existence of this combined opposition of the would-be-Aristocrats, the State Churchmen, and the Materialists,—who have no other bond of union than their opposition to these strongholds of republican freedom; it seems proper that, somewhere in this Report, the unanswerable arguments in favor of the establishment and support of Free Public Schools in a Republic, should be restated.

Nowhere have these arguments been more clearly and forcibly set forth than in the twelve annual reports made by Horace Mann, Secretary of the State Board of Massachusetts, during his successive terms of office.

When the State Board of Education was established, Horace Mann was chosen as its first Secretary. The reports prepared by him in that capacity form in themselves a varied and valuable educational library, as well as a most interesting historical record, showing the gradual and progressive development of the Common Schools. They also bear striking and irrefutable testimony to the greatness and foresight of this remarkable educator; for it is hardly too much to say that every advance step in education which has since been taken, so far at least as the public schools are concerned, is indicated, in most cases is plainly set forth, in some one of these volumes. Among these may be noted;—the teaching of vocal music, of drawing, object lessons, the phonic system of teaching the language, the abrogation of text-books by the teacher when with his class, the teaching of the higher branches of an English education, and the teaching of the elementary principles of science in the common schools; each and all of these innovations were by him suggested and urged in these reports during the twelve years immediately subsequent to 1837. To him is also due the establishment in Massachusetts of Normal Schools and of Teachers' Institutes.

The example set by the first Secretary of discussing in the Annual Report educational principles and methods, has been followed by his distinguished successors. The plan of printing in these Annual Reports extracts from the reports of the local city, county and town school authorities, from all over the State, was also long kept up and was of the greatest value as showing the educational drift. The omission of these statements and the substitution, latterly, of statistical tables only, has deprived the Massachusetts reports of most of their interest and value as indices of public opinion. In a matter so dependent upon the opinion of the community, as are the questions relating to the management and direction of the common schools, the full expression of the opinions held in the various localities, becomes of real value, such as no statistics, however carefully collected and tabulated, can possess; apart from such direct statements of the needs and wishes of the people. Statistics record the past, are statements of accomplished facts. Opinions are the shadows of coming events, and forecast the future.

The following extracts from Mr. Mann's reports for different years, are selected as exemplifying the theory and character of the Massachusetts system of common school education; and the common schools of Massachusetts are, as we have seen, the typical free public schools of America. These vary somewhat in different States and communities, but are all, essentially, the same, having the one purpose of giving free instruction to all children. These quoted passages embody, First: The historical statement showing the action of the early settlers of New England in regard to education, and the underlying principles on which are based the claims of all the children of the community to free education. Second: Illustrations of the value of Drawing, both as a study for the pupil and as a ready and effective instrument in the hands of the teacher; the latter shown by the use made of his skill in drawing by a teacher in Germany, during a recitation in Geography in the presence of Mr. Mann. Third: striking contrasts drawn between the condition of the countries of Europe with their burdens of hereditary evils, and this New World, in which a selected company of exceptional men and women began, in a wilderness, the new experiment of a social fabric unhampered by most of the Old World hinderances. Fourth: By a formal setting forth of the Massachusetts system, in the "Tenth Annual Report;" and, finally, in his last Report, by a general summing up of the arguments in favor of the Universal Free Public Education of the People.

It appears that, for some years after Massachusetts had established her system of free schools, the spread of free common schools was by no means rapid in other States. Even now, when the Massachusetts system has practically been adopted by nearly all the States of the Union, the old objections to the support of free common schools by the public, so triumphantly refuted by this merciless logician, are by no means obsolete. Selfishness is still ignorant and stupid.

It may be added, in reference to these quotations, that whatever force Mr. Mann's trenchant arguments may have had as applicable to the conditions existing in Massachusetts forty years ago, they now appeal to the people of these United States with tenfold weight. During all the years that have gone by since his warnings were uttered, the Atlantic has become but a steam ferry, and, in addition to the class of intelligent enterprising emigrants of earlier years, who sought for themselves and their children the larger opportunities offered by Free America, many European peasants like those whom Mann portrays as brutalized by ignorance, or demonized by despotism, have been poured in upon us.

The grand experiment of self-government has thus been wofully and needlessly jeopardized by the greed of demagogues for votes, and of monopolists for cheap labor.

The wonderful accretion of wealth, which in the United States has characterized the last two decades, tends directly to the development of a class of citizens suddenly enriched and priding themselves on their possessions; this brings into strong relief an antagonistic class of European-born Socialists, and Anarchists, all detrimental to the best interests of a Republic. To prevent the creation of fixed classes, to control the destructive tendencies of imported European Anarchists, to refute the impossible theories of Socialists, to keep up the prosperity of the great working majority of the people, there must be universal education of all the children, and intelligent action by the Legislators. Most forcibly, eloquently, and convincingly does Mr. Mann show how public free education tends directly to avert and control these dangers.

Whatever he has said of the value of common school education applies with equal force to the addition thereto of Industrial training, that is, to the development and enlargement of the public free education to meet the needs of the day; and, so, his words are as timely now as when first spoken. As they have long been practically out of print, I have here sought to recall them to the knowledge of the educators and legislators of to-day. I am the more encouraged in this since reading the few but weighty words addressed by Hon. E. E. White, LL. D., to the Boston Schoolmasters' Club, as given in the December, 1887, number of "Education." He sums up his remarks in the following closing sentence: "The time has come when training for manhood needs to be set forth anew as the primary and comprehensive function of the common school. Whatever else may be attempted, this training must not be sacrificed or left undone."

The following succinct statement, both of theory and practice, is from the "Seventh Annual Report" of the Secretary, printed in the sixth volume of "The Common School Journal," a periodical edited by Mr. Mann, and issued fortnightly, in which it runs from March 1st to June 1st, 1844, and fills 131 pages.

This report, recounting Mr. Mann's European tour of inspection, is full of interest and information. During his previous six years of service, in obedience to that provision of the law directing him "to collect information," he had visited the schools in many of the States; feeling that it was very desirable for him to examine the schools of other countries and being greatly in need of rest from his arduous labors, he applied to the Board of Education for a six months' leave of absence to make this foreign tour, at his own cost, which was readily granted.

He says:

> Accordingly, on the 1st of May last I embarked for Europe, and before the end of thirteen days, I was visiting schools on the other side of the Atlantic.
>
> In my travels, I visited England, Ireland and Scotland, crossed the German Ocean to Hamburgh, thence went to Magdeburgh, Berlin, Potsdam, Halle and Weissenfels, in the Kingdom of Prussia; to Leipsic and Dresden, the two great cities in the Kingdom of Saxony; thence, to Erfurt, Weimar, Eisenach, etc., on the great route from the middle of Germany to Frankfort on the Maine; thence to the Grand Duchy of Nassau, of Hesse Darmstadt and Baden, and, after visiting all the principal cities in the Rhenish Provinces of Prussia, passed through Holland and Belgium to Paris.
>
> In the course of this tour I have seen many things to deplore, and many to admire. I have visited countries where there is no national system of education at all, and countries where the minutest details of the schools are regulated by law. I have seen schools in which each word and process, in many lessons, was almost overloaded with explanation and commentary; and many schools in which 400 or 500 children were obliged to commit to memory, in the Latin language, the entire book of Psalms and other parts of the Bible,—neither teachers nor children understanding a word of the language which they were prating. I have seen countries, in whose schools all forms of corporal punishment were used without stint or measure; and I have visited one nation, in whose excellent and well ordered schools scarcely a blow has been struck for more than a quarter of a century. On reflection, it seems to me that it would be most strange if, from all this variety of system and of no system, of sound instruction and of babbling, of the discipline of violence and of moral means, many beneficial hints for our warning or our imitation, could not be derived; and as the subject comes clearly within the purview of my duty, "to collect and diffuse information respecting schools," I venture to submit to the Board some of the results of my observations.
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> On the one hand, I am certain that the evils to which our own system is exposed, or under which it now labors, exist in some foreign countries, in a far more aggravated degree than among ourselves; and if we are wise enough to learn from the experience of others, rather than await the infliction consequent upon our own errors, we may yet escape the magnitude and formidableness of those calamities under which some other communities are now suffering.
>
> On the other hand, I do not hesitate to say, that there are many things abroad which we, at home, should do well to imitate; things, some of which are here, as yet, mere matters of speulation and theory, but which, there, have long been in operation, and are now producing a harvest of rich and abundant blessings * * *. The best style of teaching arithmetic or spelling has no necessary or natural connection with the doctrine of hereditary right; and an accomplished lesson in geography or grammar commits the human intellect to no particular dogma in religion. * * *.
>
> Besides, a generous and impartial mind does not ask whence a thing comes, but what it is. Those who, at the present day, would reject an improvement because of the place of its origin, belong to the same school of bigotry with those who inquired if good could come out of Nazereth; and what infinite blessings would the world have lost had that party been punished by success! Throughout my whole tour, no one principle has been more frequently exemplified than this—that wherever I have found the best institutions,—educational, reformatory, charitable, penal or otherwise,—there I have always found the greatest desire to know how similar institutions were administered among ourselves; and where I have found the worst, there I have found most of the spirit of self-complacency, and even an offensive disinclination to hear of better methods.
>
> The examination of schools, school-houses, school systems, apparatus, and modes of teaching, has been my first object, at all times and places. Under the term "schools," I herein include all elementary schools, whether public or private; all normal schools; schools for teaching the Blind and the Deaf and Dumb; schools for the reformation of juvenile offenders; all charity foundations for educating the children of the poor

or of criminals, and all orphan establishments—of which last class there are such great numbers on the continent. When practicable and useful, I have visited gymnasia, colleges, and universities; but as it is not customary in these classes of institutions to allow strangers to be present at recitations, I have had less inducement to see them."

These extracts are sufficient to show the truly catholic spirit with which Mr. Mann pursued his investigations. His account of the various educational appliances and methods, then unfamiliar to American teachers, was of the greatest value. His graphic description of a recitation scene in a school in Scotland* is a striking example of word painting. On this occasion teacher and pupils, each equally vigorous and alert, made an amazing display of bodily and mental activity, so that it is imaginable that even Dr. Hartwell himself might be willing to concede that formal training in gymnastics was hardly an urgent need in *that* school.

This description must have given, to those used only to the pedantic stillness which was then the ideal of the kind of "discipline" essential to the best development of the model American school,—a new conception of the intense interest which arises when pupils and teacher are all aflame with the glorious enthusiasm of learning.

The accounts of his visits to asylums, prisons, schools of the Deaf and Dumb, and to those of the Blind, are full of interest; but must be here omitted as not coming within the scope of the present Report.

The following paragraph is a foreshadowing of modern methods and may be regarded as a precursor of the Kindergarten, and, indeed, as the first faint forewarning of the advent of the movement for Industrial training in all the schools:

YOUTHFUL ACTIVITIES SHOULD BE DIRECTED, NOT SUPPRESSED.

* * * . About twenty years ago, teachers in Prussia made the important discovery that children have five senses,—together with various muscles and mental faculties,—all which, almost by a necessity of their nature, must be kept in a state of activity, and which, if not usefully, are liable to be mischievously employed. Subsequent improvements in the art of teaching have consisted in supplying interesting and useful, instead of mischievous occupation, for these senses, muscles and faculties. Experience has now proved that it is much easier to furnish profitable and delightful employment for all these powers than it is to stand over them with a rod and stifle their workings, or to assume a thousand shapes of fear to guard the thousand avenues through which the salient spirits of the young play outward. Nay it is much easier to keep the eye and hand and mind at work together, than it is to employ any one of them separately from the others. A child is bound to the teacher by so many more cords, the more of his natural capacities the teacher can interest and employ.

In Part I of this Report, some evidence was given as to the value of drawing as an aid to the pupil in learning to write. On this point Mr. Mann says:

WRITING AND DRAWING.

Such excellent hand-writing as I saw in the Prussian schools, I never saw before. I can hardly express myself too strongly on this point. In Great Britain, France, or in our own country, I have never seen any schools worthy to be compared with theirs in this respect. I have before said that I found all children provided with a slate and pencil. They write or print letters, and begin with the elements of drawing, either immediately, or very soon after they enter school. This furnishes the greater part of the explanation of their excellent handwriting. * * * : This excellence must be referred in a great degree to the universal practice of learning to draw, contemporaneously with learning to write. I believe a child will learn both to draw and to write sooner and with more ease, than he will learn writing alone;— and for this reason:— the figures or objects contemplated and copied in learning to draw, are larger, more marked, more distinctive one from another, and more sharply defined with projection, angle or curve, than the letters copied in writing. In drawing there is more variety, in writing more sameness. Now the objects contemplated in drawing, *from their nature*, attract attention more readily, impress the mind more deeply, and of course will be more accurately copied than those in writing. And when the eye has been trained to observe, to distinguish, and to imitate, in the first exercise, it applies its habits with great advantage to the second.

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* See "Scotch Schools," Seventh Annual Report in "Common School Journal" of March 1, 1884, pages 99–104.

Another reason is, that the child is taught to draw things with which he is familiar, which have some significance and give him pleasing ideas. But a child who is made to fill page after page with rows of straight marks, that look so blank and cheerless though done ever so well, has and can have no pleasing associations with his work. The practice of beginning with making inexpressive marks, or with writing unintelligible words, bears some resemblance, in its lifelessness, to that of learning the alphabet. Each exhales torpor and stupidity to deaden the vivacity of the worker. * * * .

In the course of my tour, I passed from countries where almost every pupil in every school could draw with ease, and most of them with no inconsiderable degree of beauty and expression, to those where less and less attention was paid to the subject; and, at last, to schools where drawing was not practised at all; and, after many trials, I came to the conclusion that, with no other guide than a mere inspection of the copy books of the pupils, I could tell whether drawing were taught in the schools or not; so uniformly superior was the handwriting in those schools where drawing was taught in connection with it. On seeing this, I was reminded of that saying of Pestalozzi —somewhat too strong,— that "without drawing there can be no writing."

DRAWING VALUABLE FOR ITSELF.

But suppose it were otherwise, and that learning to draw retarded the acquisition of good penmanship, how richly would the learner be compensated for the sacrifice. Drawing, of itself, is an expressive and beautiful language. A few strokes of the pen or pencil will often represent to the eye what no amount of words, however well chosen, can communicate. For the master architect, for the engraver, the engineer, the pattern-designer, the draughtsman, moulder, machine-builder, or head mechanic of any kind, all acknowledge that this art is essential and indispensable. But there is no department of business or condition of life, where the accomplishment would not be of utility. Every man should be able to plot a field, to sketch a road or a river, to draw the outlines of a simple machine, a piece of household furniture or a farming utensil, and to delineate the internal arrangement or construction of a house.

But to be able to represent by lines and shadows what no words can depict, is only a minor part of the benefit of learning to draw. The study of this art develops the talent of observing even more than that of delineating. Although a man may have but comparatively few occasions to picture forth what he has observed, yet the power of observation should be cultivated by every rational being. The skilful delineator is not only able to describe far better what he has seen, but he sees twice as many things in the world as he would otherwise do. To one whose eye has never been accustomed to ,mark the form, color or pecularities of objects, all external nature is enveloped in a haze. which no sunshine, however bright, will ever dissipate. The light which dispels this obscurity must come from within. Teaching a child to draw, then, is the development in him of a new talent,— the conferring upon him, as it were, of a new sense,— by means of which he is not only better enabled to attend to the common duties of life, and to be more serviceable to his fellow-men, but he is more likely to appreciate the beauties and magnificence of nature, which everywhere reflect the glories of the Creator into his soul. * * *

A KNOWLEDGE OF DRAWING OF SPECIAL VALUE TO AMERICANS.

With the inventive genius of our people, the art of drawing would be eminently useful. They would turn it to better account than any other people in the world. We now perform far the greater part of our labor by machinery. With the high wages prevalent amongst us, if such were not the case, our whole community would be impoverished. Whatever will advance the mechanic and manufacturing arts, therefore, is especially important here; and whatever is important for men to know, as men, should be learned by children in the schools.

But whatever may be said of the importance of this art, as it regards the community at large, its value to a school-teacher can hardly be estimated.

In the vivid picture, given below, of a recitation in Geography which he attended in a Prussian School, the practical way in which a mastery of drawing can be advantageously used by a teacher thus equipped for his work, is graphically shown.

GEOGRAPHY.

In describing the manner in which Geography was taught I must use discrimination; for, in some respects, it was taught imperfectly, in others preëminently well.

The practice seemed to be uniform, however, of beginning with objects perfectly familiar to the child,—the school-house with the grounds around it, the home with its yards or gardens, and the street leading from the one to the other. First of all, the children were initiated into the ideas of space, without which we can know no more of geography than we can of history without ideas of time. Mr. Carl Ritter, of Berlin,—probably the greatest geographer now living,—expressed a decided opinion to me, that this was the true mode of beginning.

Children, too, commence this study very early,— soon after entering school,— but no notions are given them which they are not perfectly able to comprehend, reproduce, and express.

I found geography taught almost wholly from large maps suspended against the walls, and by delineations on the black-board. And here, the skill of teachers and pupils in drawing did admirable service. The teacher traced the outlines of a country on the suspended map, or drew one upon the black-board, accompanying the exhibition by an oral lecture; and, at the next recitation, the pupils were expected to repeat what they had seen and heard. And, in regard to the natural divisions of the earth, or the political boundaries of countries, a pupil was not considered as having given any proof that he had a correct image in his mind, until he could go to the black-board and reproduce it from the ends of his fingers. *I* witnessed no lesson unaccompanied by these tests.

A RECITATION IN GEOGRAPHY IN GERMANY.

I will describe, as exactly as I am able, a lesson which I heard given to a class a little advanced beyond the elements,—remarking that, though I heard many lessons given on the same plan, none of them were signalized by the rapidity and effect of the one I am about to describe.

The teacher stood by the black-board, with the chalk in his hand. After casting his eye over the class to see that all were ready, he struck at the middle of the board. With a rapidity of hand which my eye could hardly follow, he made a series of those short, divergent lines, or shadings, employed by map-engravers to represent a chain of mountains. He had scarcely turned an angle, or shot off a spur, when the scholars began to cry out, Carpathian mountains, Hungary; Black Forest mountains, Wurtemberg; Giant's mountains, (Riesen-Gebirge,) Silesia; Metallic mountains, (Erz-Gebirge,) Pine mountains, (Fichtel-Gebirge,) Central mountains, (Mittel-Gebirge,) Bohemia, &c. &c.

In less than half a minute, the ridge of that grand central elevation which separates the waters that flow north-west into the German ocean, from those that flow north into the Baltic, and north-east into the Black Sea, was presented to view,— executed almost as beautifully as an engraving. A dozen crinkling strokes, made in the twinkling of an eye, represented the head-waters of the great rivers which flow in different directions from that mountainous range; while the children, almost as eager and excited as though they had actually seen the torrents dashing down the mountain sides, cried out, Danube, Elbe, Vistula, Oder, &c. The next moment I heard a succession of small strokes or taps, so rapid as to be almost indistinguishable, and hardly had my eye time to discern a large number of dots made along the margins of the rivers, when the shout of Lintz, Vienna, Prague, Dresden, Berlin, &c. struck my ear. At this point in the exercise, the spot which had been occupied on the black-board was nearly a circle, of which the starting point, or place where the teacher first began, was the centre; but now a few additional strokes around the circumference of the incipient continent, extended the mountain ranges outwards towards the plains,— the children responding the names of the countries in which they respectively lay. With a few more flourishes the rivers flowed onwards towards their several terminations, and by another succession of dots, new cities sprang up along their banks. By this time the children had become as much excited as though they had been present at a world-making. They rose in their seats, they flung out both hands, their eyes kindled, and their voices became almost vociferous as they cried out the names of the different places, which under the magic of the teacher's crayon rose into view. Within ten minutes from the commencement of the lesson, there stood upon the black-board a beautiful map of Germany, with its mountains, principal rivers and cities, the coast of the German ocean, of the Baltic and the Black seas; and all so accurately proportioned that I think only slight errors would have been found had it been subjected to the test of a scale of miles. A part of this time was taken up in correcting a few mistakes of the pupils; for the teacher's mind seemed to be in his ear as well as in his hand, and notwithstanding the astonishing celerity of his movements, he detected erroneous answers and turned around to correct them. The rest of the recitation consisted in questions and answers respecting productions, climate, soil, animals, &c. &c.

Many of the cosmogonists suppose that after the creation of the world, and when its whole surface was as yet fluid, the solid continents rose gradually from beneath the sea,—first the loftiest peaks of the Andes, for instance, emerged from the deep, and as they reached a higher and a higher point of elevation, the rivers began to flow down their sides, until at last,—the lofty mountains having attained their height, the mighty rivers their extent and volume, and the continent its amplitude,—cultivation began, and cities and towns were built. The lesson I have described was a beautiful illustration of that idea,—with one advantage over the original scene itself, that the spectator had no need of waiting through all the geological epochs to see the work completed.

COMPARISON BETWEEN AN ORDINARY AMERICAN AND THIS GERMAN RECITATION.

Compare the effect of such a lesson as this, both as to the amount of the knowledge communicated, and the vividness and of course the permanence of the ideas obtained, with a lesson where the scholars look out a few names of places on a lifeless atlas, but never send their imaginations abroad over the earth; and where the teacher sits listlessly down before them to interrogate them from a book, in which all the questions are printed at full length, to supersede on his part all necessity of knowledge.

Thoroughly and beautifully as I saw some departments of geography taught in the Common Schools of Prussia, traced out into their connections with commerce, manufactures, and history, I found but few of this class of schools in which *universal* geography could, with any propriety, be considered as a part of the course. The geography of their own country was minutely investigated. That of the western hemisphere was very little understood. But this should be said, that as far as they professed to teach, they taught thoroughly and well.

In the final pages of this report, Mr. Mann sums up the result of his observation of the conditions of the European world.

EUROPEAN AND AMERICAN CONDITIONS CONTRASTED.

Whatever may be the especial object of the American citizen in going abroad, still, if his mind is imbued with the true spirit of the institutions of his own country, he cannot fail, in traveling through the different nations of Europe, to find material for the most profound and solemn reflection. There is no earthly subject, in its own nature, of higher intrinsic dignity and interest than a contemplation of the different forms into which humanity has been shaped by different institutions. This interest deepens, when we compare our own condition with the contemporaneous condition of other great families of mankind. Tracing back, by the light of history and philosophy, these respective conditions to their causes in some period of antiquity more or less remote, we behold the head-springs of those influences which have given such diversity to the character and fortunes of different portions of the race. We are enabled not only to see the grand results which have been wrought out by certain agencies, acting through long periods of time, but we are brought into immediate contact, and we commune, as it were face to face, with those great principles which bear the future destinies of mankind in their bosom. Whatever now is, whether of weal or woe, is the effect of causes that have preëxisted; in like manner, whatever is to be, whether of glory or of debasement, will result from the causes put in operation by ourselves or others. The Past is a unit, fixed, irrevocable, about which there is no longer either option or alternative; but the Future presents itself to us as an Infinite of Possibilities. For the great purposes of duty and happiness, to-morrow is in the control of the weakest of men; but yesterday is beyond the dominion of the mightiest prince or potentate;—it is no longer changeable by human or divine power. The future, then, is our field of action; the past is only valuable as furnishing lights by which that field can be more successfully entered and cultivated. For this purpose we study the history of particular parts of the globe, of particular portions of our race,—of Europe, for instance,—for the last thousand or two thousand years; we learn what manner of men have borne sway; we discern the motives by which they have been actuated; we study the laws they have made, and the institutions they have established for shaping and moulding *their* unformed future. We go to Europe, or, by other means, we examine and investigate the present social, intellectual and moral condition of its people; and here we have the product,—the grand result, of men, motives, laws, institutions, all gathered and concentrated into one point, which we can now see, just as we see the fabric which comes from a piece of complicated machinery, when the last revolution of the last wheel rolls it into our hands for inspection.

And what is this result! In a world which God has created on such principles of wisdom and benevolence, that nothing is wanting, save a knowledge of His commands and an obedience to them, to make every human being supremely happy,—what amount of that knowledge is possessed, what degree of that happiness is enjoyed?

PREVAILING IGNORANCE OF EUROPEAN PEASANTS.

It is no adequate representation of the fact, to say, that not anything like one-half of the adult male population of Europe can read and write in any intelligible manner,—and hence are shut out from a knowledge of all history, sacred and profane, and of all contemporary events;—that not one third are comfortably housed, or fed, or clothed, according to the very lowest standard of comfort amongst the laboring classes in this country;—that not one individual in five hundred has any voice in the enactment of the laws that bind him, or in the choice of the rulers, who dispose of his property, liberty and life;—and that, excepting in a few narrow and inconsiderable spots, the inalienable right of freedom in religion, and liberty to worship God according to the dictates of conscience, is not recognized or known;—nay, that the claim of any such liberty is denounced and spurned at and its advocates punished, not only by a denial of the right itself, but by the deprivation of all human rights whatever;—all these facts, deeply as they affect human happiness, greatly as they derogate from human dignity, present no living picture of Europe, as it now exists. All this is negation only; it leaves wholly untouched the side of positive, boundless suffering and wrong.

UNEQUAL DISTRIBUTION OF WEALTH.

In the Europe of the nineteenth century, the incomputable wealth that flows from the bounty of Heaven, during the revolving seasons of the year, and is elaborated from the earth by the ceaseless toil of millions of men;—that wealth which is wrought out by human labor and ingenity, in conjunction with the great agencies of nature,—fire, water, wind and steam,—and whose aggregates are amply sufficient to give comfort and competence to every human being, and the joys of home and the sacred influences of the domestic circle to every family,—that wealth, by force of unjust laws and institutions, is filched from the producer, and gathered into vast masses, to give power, and luxury, and aggrandizement to a few. Of *production* there is no end; of *distribution* there is no beginning. Nine hundred and ninety-nine children of the same common Father suffer from destitution, that the thousandth may revel in superfluities. A thousand cottages shrink into meanness and want, to swell the dimensions of a single palace. The tables of a thousand families of the industrious poor waste away into drought and barrenness, that one board may be laden with surfeits. As yet, the great truth has scarcely dawned upon the mind of theorist or speculator, that the political application of doing as we would be done by is, to give to every man entire equality before the law, and then to leave his fortunes and his success to depend upon his own exertions.

He finds that a few individuals, or families, have unsurped and maintain dominion over almost two hundred millions of men. After reading his vivid portraiture of the degradation of the human being caused by the despotism of centuries, the fact that the children of such classes have grown up to be the Anarchists of to-day seems no longer strange.

THE EFFECT ON THE HUMAN BEING OF IGNORANCE, POVERTY AND DESPOTISM.

* * * Hence, throughout wide regions of country, man is no longer man. Formed in the image of his Maker, the last vestiges of that image are nearly obliterated. He no longer breathes that breath of independent and conscious life that first animated his frame, and made him a living soul. The heavenly spark of intelligence is trodden out from his bosom. In some countries which I have visited, there are whole classes of men and women, whose organization is changing, whose whole form, features, countenance, expression, are so debased and brutified by want and fear and ignorance and superstition, that the naturalist would almost doubt where, among living races of animals, to class them. Under governments where superstition and ignorance have borne most sway, the altered aspect of humanity is assimilating to that of the brute; but where resistless power has been trampling, for centuries, upon a sterner nature and a stronger will, the likeness of the once human face is approximating to that of a fiend. In certain districts of large cities,— those of London, Manchester, Glasgow, for instance,— such are the influences that surround children from the day they are brought into the world, and such the fatal education of circumstances and example to which they are subjected, that we may say they are born in order to be imprisoned, transported, or hung, with as exact and literal truth as we can say that corn is grown to be eaten.

Not in a single generation could either the cruelties of the oppressor, or the sufferings of his victim, have effected these physical and mental transformations. It has taken ages and centuries of wrongs to bend the body into abjectness, to dwarf the stature, to extinguish the light of the eye, and to incorporate into body and soul the air and movements of a slave. And the weight and fulness of the curse is this, that it will require other ages and centuries to efface these brands of degradation,— to re-edify the frame, to rekindle in the eye the quenched beam of intelligence, to restore height and amplitude to the shrunken brow, and to reduce the overgrown propensities of the animal nature within a manageable compass. Not only is a new spirit to be created, but a new physical apparatus through which it can work. This is the worst,— the scorpion sting, in the lash of despotism. There is a moral and a physical entailment, as well as a civil. Posterity is cursed in the debasement inflicted upon its ancestors. In many parts of Europe, the laws both of the material and of the moral nature have been so long outraged, that neither the third nor the fourth generation will outlive the iniquities done *to* their fathers.

Then he contrasts the conditions in Europe with those which in the new world surrounded the first settlers of Massachusetts. In this connection, his statement in regard to the intelligence and standing of those settlers is worthy of attention, in view of the astonishing remark made by Mr. Irving, in his recent address on the occasion of the opening of the Shakespeare fountain (1887) in Stratford on Avon,— the generous gift made by Mr. George W. Childs, of Philadelphia, in witness of America's equal inheritance with England in Shakespeare's works and fame.

The celebrated manager-actor sought to trace some connection between the Actor Shakespeare and the New England settlers, and suggested that it might be found in the possibility that some ignorant man might have been in an audience among the "groundlings" at the Globe Theatre, and, later, have carried to New England his personal recollections and impressions of the great playwright.

If he had based a want of knowledge of Shakespeare on the part of the early settlers of New England, upon the improbability that any of the Puritans of that day ever visited a theatre, and therefore, that they were doubtless personally ignorant of the player, there would have been much plausibility in the suggestion. The impression conveyed by his words, however, whether intentional or not, was that the settlers of Massachusetts were an ignorant lot of very common people; and, therefore, it was hardly to be expected that they could have had any knowledge of England's greatest Poet!

That this erroneous impression as to the character of those early settlers is not unusual in England, is inferentially shown by the address of Rev. Mr. MacCarthy, on "The growth of the English and American Educational Ideals," quoted from, on pages 26–28 of this volume. In this address, the Reverend gentleman, tracing the causes which led these struggling colonists to make such unprecedented efforts in behalf of education, directly controverts this popular fallacy; and shows that there were among the colonists who came to Massachusetts, from 1630 to 1690 inclusive, many men of prominence and culture;—as large a proportion of university-bred men, in fact, as were to be found at that time among any equal number of inhabitants in England; and so, it follows that, since these Englishmen were of the very classes to have been reached by the literary as well as political movements of this era, their possible knowledge of Shakespeare could hardly have been dependent upon the accidental presence among them of a single ignorant playgoer!

Mr. Mann says:

> Again, the population of a country may be so divided into the extremes of high and low, and each of these extremes may have diverged so widely from a medium, or standard of nature, that there are none, or but a very small intermediate body, or middle class of men, left in the nation. * * *
>
> It was from a condition of society like this,—or from one where principles and agencies were at work tending to produce a condition of society like this,—that our ancestors fled.

THE SETTLEMENT OF NEW ENGLAND.

> They came here, as to a newly-formed world. In many respects, the colonization of New England was like a new creation of the race. * * * . Not the least among the blessings which they brought, were health and a robustness of constitution, that no luxury had ever enervated or vicious indulgences ever corrupted. In all that company, there was not a drop of blood which had been tainted by vice, nor an act of life that had been stained by crime. Arriving here at a period when winter had converted the land into one broad desert, the inclemency of the season and the extremity of their toils, swept away all the less healthful and vigorous; and left not man or woman, save those whose hardy and powerful frames, the perils of the ocean, and the wintry rigors of the clime, and the privations of a houseless and provisionless coast, had assailed in vain. In physical energy and hardihood, such were the progenitors of New England. * * * . Mighty as were their bodies, their spirits were mightier still. Some of the former did yield to privation, and peril, and disease; but in that whole company, not a heart ever relented. Stanch, undaunted, invincible, they held fast to what they believed to be the dictates of conscience and the oracles of God; and in the great moral epic which celebrates the story of their trials and their triumphs, the word "apostate" is nowhere written.
>
> This transference of the fortunes of our race from the Old to the New World, was a gain to humanity of at least a thousand years;—I mean, if all the great and good men of Europe, from the 22d of December, 1620, had united their energies to ameliorate the condition of the human family, and had encountered no hostility, either from civil or religious despotism, it would have taken ten centuries to bring the institutions and the population of Europe to a point where the great experiment of improving the condition of the race, by means of intellectual, moral, and religious culture, could be as favorably commenced, as it was commenced on the day when the Pilgrims first set foot upon the rock of Plymouth. What mighty obstructions and hinderances to human progress did they leave behind them! What dynasties of powerful men, and the more firmly seated dynasties of false opinions! But in the world to which they came, there were no classes upheld by law in feudal privilege and prerogative. There were no laws of hereditary descent upholding one class in opulence and power, irrespective of merit or vigor, and degrading other classes to perpetual indigence and servility, without demerit or imbecility. Here was no cramped territory, whose resources were insufficient to furnish a healthful competence to all; nor any crowded population, struggling so earnestly to supply their cravings for daily necessities, that all the nobler wants of the soul were silenced by

the clamor of the appetites. No predatory barons had conquered the whole land, and monopolized it, and, by a course of legislation as iniquitous as the original robbery itself, had predestined its descent in the line of particular families through all coming time, so that *not one in hundreds* of all who should be born into the State, could own a rood of ground, which he might till for subsistence while living, or beneath which he could have a right of burial when dead.*

THE EARLY SETTLERS OF MASSACHUSETTS AN EDUCATED CLASS.

Our Pilgrim Fathers also possessed intelligence,— not merely common learning, and information on common affairs,— but most of them were men of accomplished education, conversant with the world's history, profoundly thoughtful, and as well qualified as any equally numerous community that had ever existed, to discuss the deepest questions of state or church, of time or eternity. Hence we are not the descendants of an ignorant horde, or pauper colony, driven out from the parent country in quest of food, and leaving all metropolitan art, intelligence and refinement behind them. Besides, almost coëval with the settlement of the colony, they founded a college and established Common Schools. In the first clearings of the forest, by the side of the first dwellings which they erected for a shelter, they built the school-house; and of the produce of the first crops planted for their precarious subsistence, they apportioned a share for the maintenance of teachers and professors. This they did, that the altar-lights of knowledge and piety which they had here kindled, might never go out. This they did, hoping that each generation would feed the flame to illumine the path of its successors,— a flame which should not be suffered to expire, but should shine on forever to enlighten and gladden every soul that should here be called into existence. * * * .

The reflections with which Mr. Mann closes his report appeal to the thoughtful consideration of his readers of to-day even more forcibly than they could have done to his contemporaries. They appeal to a people who have outstripped all the nations of the world in rapid increase of population and in sudden accretion of wealth. The idle rich, the dissipated "Gilded Youth," more worthless, if not as dangerous, to a country, than the idle poor—"the Tramp,"—have multiplied an hundred fold; and are readily recognized in our large cities as a distinctive class who ape English manners, customs and accent, and who, after great effort, sometimes succeed in copying fairly the manners of the English "cad," but never of the gentleman. These brainless spendthrifts, poor imitators of bad European models, are in striking external contrast with some occasional specimens of genuine European importations; the few shiftless adult paupers and professional beggars, who, in some surreptitious ways, despite official precautions, have reached our cities. Neither of these parasites of civilization were known to America during Mr. Mann's lifetime.

The war against the Union, begun by their masters, having resulted in the emancipation and enfranchisement of the former slaves; the constant inpouring of European emigrants, admitted to vote, long before they even acquire any considerable knowledge or use of the language, and utterly unquestioned as to their comprehension of the principles that are vital to a republican form of government; these two uncertain elements having been added to the voting population, together with a dangerous increase of pauper and criminal classes in our large cities; all these combined influences, which put in jeopardy our form of government, influences wholly unknown when these Reports were written by Mr. Mann but which in our day can not be ignored; lend added weight to these solemn appeals.

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* The population of England is 16,000,000. The number of landholders in fee is estimated by the Radicals at 30,000, and by the Tories at 36,000. A mean of 33,000 would give one landowner to 484 non-landowners.

DUTIES IMPOSED ON THE DESCENDANTS OF SUCH ANCESTRY.

It is in no boastful or vain-glorious spirit that I refer to this heroic period of our country's history. It is in no invidious mood that I contrast the leading features of our civil polity and our social condition, with those of the trans-atlantic nations of Christendom. Rather must I confess that the contemplation of these historic events, brings more humiliation than pride. It demands of us, whether we have retained our vantage-ground of a thousand years. It forces upon the conscience the solemn question, whether we have been faithful to duty. Stewards of a more precious treasure than was ever before committed to mortal hands, are we prepared to exhibit our lives and our history as the record of our stewardships? On the contrary, do we not rather cling to the trust, and vaunt the confidence wherewith we have been honored, without inquiring whether the value of the deposit is not daily diminishing in our hands? Subtract the superiority which, under our more propitious circumstances, we ought to possess, and how much will remain as the oliment of pride? It is not enough for us to say, that we are exempt from the wretchedness of the masses, and from the corruptions of the courts, of other lands. With our institutions and resources, these should have been incommunicable evils,— evils which it would have been alike unmeritorious to avoid, and unpardonable to permit. It is no justification for us, to adduce the vast, the unexampled increase of our population. The question is not, how many millions we have, but what are their character, conduct, and attributes. We can claim neither reward nor approval for the exuberance of our natural resources, or the magnificence of our civil power. The true inquiry is, in what manner that power has been used, how have those resources been expended? they were convertible into universal elevation and happiness,— have they been so converted? * * * Have we, by self-denial, by abstinence from pernicious luxuries, by beneficent labor, by obedience to the physical and organic laws of our nature, retained that measure of health and longevity to which, but for our own acts of disinherison, we had been rightful heirs? Where temptations are few, vice should be so rare as to become monstrous; where art and nature lavish wealth, a pauper should be a prodigy;— but have we prevented the growth of vice and pauperism amongst us, by seeking out every abandoned child within our borders, as the good shepherd seeks after the lambs lost from his flock; and by training all to habits of industry, frugality, temperance, and an exemplary life? Have we remembered that, if every citizen has a right to vote when he becomes a man, then the right of every child to that degree of knowledge which shall qualify him to vote, is a thousand times as strong? Have the more fortunate classes amongst us,— the men of greater wealth, of superior knowledge, of more commanding influence,— have they periodically arrested their own onward march of improvement, and sounded the trumpet, and sent out guides and succors *to bring up the rear of society?* Have we insulated ourselves, as by a wall of fire, from the corruptions and follies engendered in European courts, and practised only by those who abhor the name of Republic? Have we caused the light of our institutions so to shine before the world, that the advocates of liberty in all parts of the earth can boldly point to our frame of government, as the model of those which are yet to bless mankind? Can we answer these questions as the myriad sufferers under oppression in other lands would have us answer them? If not, then we have not done to others as we would that others, were circumstances reversed, should do unto us. * * *.

The experience of the ages that are past, the hopes of the ages that are yet to come, unite their voices in an appeal to us;— they implore us to think more of the character of our people than of its numbers; to look upon our vast natural resources, not as tempters to ostentation and pride, but as means to be converted by the refining alchemy of education into mental and spiritual treasures; they supplicate us to seek for whatever complacency or self-satisfaction we are disposed to indulge, not in the extent of our territory, or in the products of our soil, but in the expansion and perpetuation of the means of human happiness; they beseech us to exchange the luxuries of sense for the joys of charity, and thus give to the world the example of a nation, whose wisdom increases with its prosperity, and whose virtues are equal to its power. For these ends, they enjoin upon us a more earnest, a more universal, a more religious devotion of our exertions and resources, to the culture of the youthful mind and heart of the nation. Their gathered voices assert the eternal truth that, In a Republic, Ignorance is a Crime; and that Private Immorality is not less an opprobrium to the State that it is guilt in the perpetrator.

From the Eighth Annual Report* the following paragraphs are quoted, as showing the value of the higher branches of an English Education to a Mechanical people, such as are the inhabitants of Massachusetts. The probabilities of the rise of intellectual castes in society, based on the superior education of the few, when only the bare rudiments of knowledge should be imparted in the free common schools are portrayed; and, finally, the rapid deterioration of a community in which, from any general cause, the children of five years of age and upwards, are not sent to school, are forcibly presented, as illustrated by the history of Paisley, in Scotland.

The arguments for the giving instruction in the elements of natural science would apply equally to the advisability of affording like opportunities for obtaining both industrial and technical instruction. Mr. Mann says:

VALUE OF A KNOWLEDGE OF ELEMENTARY SCIENCE TO AN INVENTIVE PEOPLE.

The people of Massachusetts, to a greater extent than those of any other State in the Union, are a mechanical people. The inventive genius and practical skill of our citizens, in their applications to the useful arts of life, have given a commonness to comfort, and a widespreading expansion to physical enjoyment and well-being, such as are not possessed by any other community of equal numbers, on the face of the globe. We have more than eighty-five thousand persons engaged in manufactures and trades, which number represents a population of at least three hundred thousand, or six-fifteenths of all the inhabitants of the Commonwealth. With this wide range of every-day business and occupation, the first principles of natural and mechanical philosophy have the most intimate connection. Our pecuniary well-being as a people, the individual competence and independence of our citizens, are depending more and more upon our skill and progress in these departments of industrial labor. Shut out all branches of natural philosophy from our schools, exclude those seminal ideas and principles upon which, and with which, inventive genius afterwards works,—from which, talent is constantly evolving new applications of the forces and affinities of nature, and thus ameliorating and advancing the condition of man,—and what an inappreciable amount of actual good would be prevented, to say nothing of positive evils which would be incurred. And, as applicable to this subject, let me say, that we are responsible for the good we prevent as well as for the evil we commit.

That the dangers pointed out in the last sentence of the following paragraphs, were not merely imaginary, the murderous dynamite bombs exploded with such deadly effect in Haymarket Square, Chicago, by the enemies of all social order, bear witness. "Blind rage and vindictiveness" inspired those murders!

DANGER TO THE COMMUNITY IF NOTHING BUT THE MERE RUDIMENTS OF KNOWLEDGE ARE TAUGHT IN THE COMMON SCHOOLS.

But again; suppose the mass of our young men to grow up to the period of adult life, without the acquisition of anything but the mere elements or rudiments of knowledge, with no general enlargement of mind, no expansion or opening of the faculties towards those different departments of nature for which they were designed and preädapted by their beneficent Creator, and what a vast chasm would at once yawn, between the neglected many and those favored few who had enjoyed the privileges of academical or collegiate education. At once, literary castes would arise in society, as haughty, as exclusive, as antagonistic as the Brahminical. The community would be dissociated, gathered into clans, with but a few intermediate links in the social chain to serve as a medium of sympathy between the extremes. Men of active, inquiring, replenished minds, naturally seek their associates among men of active, inquiring, replenished minds. If they go in quest of the ignorant, the stockish, the brutified, it is only through the impulses of that divine missionary spirit which seeks the blessing of giving rather than of receiving good. This class of men, unhappily, is very small. Hence the chasm which our institutions — not nature,— would have created, would remain unbridged. Intellectual castes would inevitably be followed by castes in privileges, in honor, in property, unless the latter should be destroyed,— as under our political institutions would be probable, if not certain,— by the blind rage and vindictiveness of their social inferiors.

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* "Eighth Annual Report of the Board of Education, together with the Eighth Annual Report of the Secretary of the Board. (Printed in the numbers of the Common School Journal (issued fortnightly), beginning with the number for February 15th, 1845, and ending in that of May 1st.")

What must result, if the common schools are abandoned for other schools provided for different classes of society,—is shown by the results of such training in European countries.

EUROPEAN CLASS EDUCATION TO BE AVOIDED.

In many of the more enlightened, yet arbitrary governments of Europe, where the great doctrines of human rights are dimly seen in theory, and still more dimly recognized in practice, a distinction prevails in regard to the education of the community at large, which should be sedulously excluded from a republican system. According to this distinction, all the avocations of men naturally arrange themselves under three heads. The first class embraces all those industrial employments where we act with material instruments upon material things,— *with matter upon matter*. This includes all mere manual laborers,— the hewers of wood, the drawers of water, ditchers, delvers, &c. In the second class, are comprised all those who act *by mind* upon matter,— the master-mason or architect, head-machinists, head-miners, foresters, engineers, &c. The third class are those who act by mind *upon mind*,— the orator, the poet, the historian, statesman, &c. Different courses of education are projected to meet the supposed necessities of these different grades. But how incongruous and absurd are these notions among a people, by the theory of whose institutions the Chief Magistracy of the State, or of the Nation; is open to the poorest boy that is born in the land!

The following historical account of the situation of affairs in Paisley, Scotland, was given as a foot-note to the preceeding paragraph:

I subjoin a few extracts from the "North British Review," containing some historical sketches of the Town of Paisley, in Scotland. They show with what fearful rapidity, a people that neglects the education of its children, will descend in the scale of poverty, degradation and crime. By the facts stated it appears, that not even the neglected generation itself will pass away, without punishing their social superiors for their dereliction from duty. Retribution descends suddenly upon the wealthy, the educated and the powerful, upon whose remissness, the vices, ignorance and guilt of the less fortunate classes in society, are to be primarily charged.

PAISLEY IN 1800–1844.

"* * * . As some important practical results, both of a moral and political nature, may be drawn from a review of its past and present history, it is our intention, in the present article, to take a cursory view of the *weavers*,— in other words, the general population of that town, from about the year 1775 or 1780 to the present day, contrasting its moral and intellectual character, at two or three distinct periods, and endeavoring to account for the sad declension in public manners which of late has been so obvious to the country at large.

"To state the simple fact, that the once quiet, sober, moral and intelligent inhabitants of Paisley, are now generally a turbulent. immoral and half-educated population, is to state what almost every one knows, what many mourn over, but for which few seem able to propose any remedy.

"It is indeed a melancholy subject for contemplation, that what was at first eagerly embraced by many as an addition to their family receipts, has ultimately proved, not a chief cause of individual poverty only, but of family feuds, insubordination on the part of children, and, as a natural consequence, a general moral degradation over the whole community. We allude to the practice, introduced about the year 1800, (when the manufacture of India imitation shawls was first commenced,) of employing children as draw-boys from the early age of five or six to ten or eleven years,— a period of life, till then, uniformly spent in school, or in youthful amusements; but subsequently, from a rapid increase in this branch, all the available children were employed in the weaving-shop. * * * . Thus was the employment of their children from five to ten, by the weavers of Paisley, at first an apparent advantage, but in the end, a curse; demonstrating that whatever may be the interests of parents this year or next year, it is permanently the interest of them and their offspring to refuse every advantage in their temporal concerns, which tends to deprive youth of the first of parental blessings, education; and that Providence has bound, in indissoluble alliance, the intelligence, the virtue, and the temporal well-being of society. In 1818–19, during the radical period, there were found full three thousand, Paisley-born and Paisley-bred, who could not read; and the decline of intelligence has been followed by the decline of that temperance, prudence and economy, which are the cardinal virtues of the working classes, by which alone they can elevate their condition, or preserve themselves from sinking into the most abject poverty."

In his Tenth Annual Report, the Secretary set forth the theory of the Massachusetts School system and gave copies of such laws in regard to it, as were then in force. This report was so highly esteemed that the Legislature ordered a republication with such "requisite additions and alterations as might be needed to exhibit a just and correct view of the Common School system of Massachusetts, and the provisions of law relating to it." It is from this enlarged report that the following extracts were taken.*

MASSACHUSETTS SYSTEM OF COMMON SCHOOLS.

To write a History of Popular Education in Massachusetts would be a work of great interest, and of little difficulty. Such a history, however, seems not to have been contemplated, and, therefore, would not be warranted, by those Resolves of the Legislature under which the following pages are prepared. * * * . An adequate idea of this "system," however, can hardly be obtained without a brief reference to its origin, and to those great fundamental principles, which its authors and supporters seem rather to have tacitly assumed than to have fully expounded.

The Pilgrim Fathers who colonized Massachusetts Bay made a bolder innovation upon all preëxisting policy and usages than the world had ever known since the commencement of the Christian era. They adopted special and costly means to train up the whole body of the people to industry, to intelligence, to virtue, and to independent thought. * * * .

In 1642, the General Court of the colony, by a public act, enjoined upon the municipal authorities the duty of seeing that every child, within their respective jurisdictions, should be educated. Nor was the education which they contemplated either narrow or superficial. * * * .

Thus were recognized and embodied, in a public statute, the highest principles of Political Economy and of social well being;—the universal education of children, and the prevention of drones or non-producers among men. * * * .

The law of 1642 enjoined universal education, but it did not make education *free;* nor did it impose any penalty upon municipal corporations for neglecting to maintain a school. The spirit of the law, however, worked energetically in the hearts of the people. * * * .

AN IMPORTANT DISTINCTION IN THE MEANING OF THE TERM "GRAMMAR SCHOOL."

It is common to say that the act of 1647 *laid the foundation* of our present system of Free Schools. But the truth is, it not only laid the foundation of the present system, but, in some particulars, it laid a far broader foundation than has since been built upon, and reared a far higher superstructure than has since been sustained. Modern times have witnessed great improvements in the methods of instruction and in the motives of discipline; but, in some respects, the ancient foundation has been narrowed, and the ancient superstructure lowered. The term "grammar school," in the old laws, always meant a school where the ancient languages were taught, and where youth could be "fitted for the university." Every town, containing one hundred families or householders, was required to keep such a school. Were such a law in force at the present time, there are not more than twelve towns in the Commonwealth which would be exempt from its requisitions. But the term "grammar school" has wholly lost its original meaning; and the number of towns and cities which are now required by law to maintain a school, where the Greek and Latin languages are taught, and where youth can be fitted for college, does not exceed thirty. The contrast between our ancestors and ourselves, in this respect, is most humiliating. Their meanness in wealth was more than compensated by their grandeur of soul.

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* The Massachusetts system of Common Schools, being an enlarged and revised edition of the Tenth Annual Report of the First Secretary of the Massachusetts Board of Education. Boston: Dutton and Wentworth, State Printers, No. 37 Congress street, 1849. Pp. 212. Tables LXIII, and Index X.

THE ADVANCED EDUCATIONAL POSITION TAKEN BY THE FOUNDERS OF NEW ENGLAND.

The institution of a Free School system, on so broad a basis and of such ample proportions, appears still more remarkable, when we consider the period, in the world's history at which it was originated, and the fewness and poverty of the people by whom it was maintained. In 1647, the entire population of the colony of Massachusetts Bay is supposed to have amounted only to twenty-one thousand souls. The scattered and feeble settlements were almost buried in the depths of the forest. The external resources of the people were small, their dwellings humble, and their raiment and subsistence scanty and homely. They had no enriching commerce, and the wonderful forces of nature had not then, as now, become gratuitous producers of every human comfort and luxury. The whole valuation of all the colonial estates, both public and private, would hardly have been equal to the inventory of many a private citizen of the present day. The fierce eye of the savage was nightly seen glaring from the edge of the surrounding wilderness, and no defence or succor, save in their own brave natures, was at hand. Yet it was then, amid all these privations and dangers, that the Pilgrim Fathers conceived the magnificent idea, not only of a Universal, but of a Free education for the whole people. To find the time and the means to reduce this grand conception to practice, they stinted themselves, amid all their poverty, to a still scantier pittance; amid all their toils, they imposed upon themselves still more burdensome labor; and, amid all their perils, they braved still greater dangers. Two divine ideas filled their great hearts,—their duty to God and to posterity. For the one, they built the church; for the other, they opened the school. Religion and Knowledge!—two atributes of the same glorious and eternal truth, and that truth the only one on which immortal or mortal happiness can be securely founded!

It is impossible for us adequately to conceive the boldness of the measure which aimed at universal education, through the establishment of Free Schools. As a fact, it had no precedent in the world's history; and, as a theory, it could have been refuted and silenced by a more formidable array of argument and experience than was ever marshalled against any other institution of human origin. But time has ratified its soundness. Two centuries of successful operation now proclaim it to be as wise as it was courageous, and as beneficent as it was disinterested. Every community in the civilized world awards it the meed of praise; and states at home, and nations abroad, in the order of their intelligence, are copying the bright example. What we call the enlightened nations of Christendom, are approaching, by slow degrees, to the moral elevation which our ancestors reached at a single bound; and the tardy convictions of the one, have been assimilating, through a period of two centuries, to the institutions of the other.

The establishment of Free Schools was one of those grand mental and moral experiments whose effects could not be developed and made manifest in a single generation. But now, according to the manner in which human life is computed, we are the sixth generation from its founders; and have we not reason to be grateful, both to God and man, for its unnumbered blessings! The sincerity of our gratitude must be tested by our efforts to perpetuate and to improve what they established. The gratitude of the lips only is an unholy offering. * * * .

The alleged ground upon which the founders of our Free School system proceeded, when adopting it did not embrace the whole argument by which it may be defended and sustained. Their insight was better than their reason. * * * .

The early arguments for free public schools which were based on reasons satisfactory to protestants, the later ones, based on the nature and needs of Republics, are each, in turn, reviewed and pronounced insufficient and defective; because the arguments in favor of public education which appeal so strongly to a class, furnish to the antagonistic class the strongest reasons for opposition. Mr. Mann, also concedes the force both of the arguments based on considerations of political economy, and of those urged by the Moralists, but adds:

THE CLAIMS OF EDUCATION CONSIDERED IN RELATION TO THE SO-CALLED "RIGHTS OF PROPERTY."

And yet, notwithstanding these views have been presented a thousand times, with irrefutable logic, and with a divine eloquence of truth which it would seem that nothing but combined stolidity and depravity could resist, there is not at the present time, with the exception of the States of New England and a few small communities elsewhere, a country or a state in Christendom, which maintains a system of Free Schools for the education of its children. Even in the State of New York, with all its noble endowments, the Schools are not Free.*

I believe that this amazing dereliction from duty, especially in our own country, originates more in the false notions which men entertain *respecting the nature of their right to property*, than in anything else. In the district school meeting, in the town meeting, in legislative halls, everywhere, the advocates for a more generous education could carry their respective audiences with them in behalf of increased privileges for our children, were it not instinctively foreseen that increased privileges must be followed by increased taxation. Against this obstacle, argument falls dead. The rich man, who has no children, declares that the exaction of a contribution from him, to educate the children of his neighbor, is an invasion of his rights of property. The man who has reared and educated a family of children denounces it as a double tax, when he is called upon to assist in educating the children of others also; or, if he has reared his own children without educating them, he thinks it peculiarly oppressive to be obliged to do for others what he refrained from doing even for himself. Another, having children, but disdaining to educate them with the common mass, withdraws them from the Public School, puts them under what he calls "selecter influences," and then thinks it a grievance to be obliged to support a school which he contemns. Or, if these different parties so far yield to the force of traditionary sentiment and usage, and to the public opinion around them, as to consent to do something for the cause, they soon reach the limit of expense at which their admitted obligation, or their alleged charity, terminates.

It seems not irrelevant, therefore, in this connection, and for the purpose of strengthening the foundation on which our Free School system reposes, to inquire into the nature of a man's right to the property he possesses; and to satisfy ourselves respecting the question, whether any man has such an indefeasible title to his estate or such an absolute ownership of them, as renders it unjust in the government to assess upon him his share of the expenses of educating the children of the community, up to such a point as the nature of the institutions under which he lives, and the well-being of society, require.

I believe in the existence of a great, immortal, immutable principle of Natural Law, or Natural Ethics,—a principle antecedent to all human institutions, and incapable of being abrogated by any ordinances of man,—a principle of divine origin, clearly legible in the ways of Providence as those ways are manifested in the order of nature and in the history of the race,— which proves the *absolute right* to an education, of every human being that comes into the world; and which, of course, proves the correlative duty of every government to see that the means of that education are provided for all.

In regard to the application of this principle of natural law,—that is, in regard to the extent of the education to be provided for all, at the public expense,— some differences of opinion may fairly exist, under different political organizations; but under our republican government, it seems clear that the minimum of this education can never be less than such as is sufficient to qualify each citizen for the civil and social duties he will be called to discharge;— such an education as teaches the individual the great laws of bodily health; as qualifies for the fulfilment of parental duties; as is indispensable for the civil functions of a witness or a juror; as is necessary for the voter in municipal and in national affairs; and finally, as is requisite for the faithful and conscientious discharge of all those duties which devolve upon the inheritor of a portion of the sovereignty of this great republic. * * * . And so far is it from being a wrong or a hardship to demand of the possessors of property their respective shares for the prosecution of this divinely-ordained work, that they themselves are guilty of the most far-reaching injustice, when they seek to resist or to evade the contribution. The complainers are the wrong-doers. The cry, "Stop thief," comes from the thief.

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* By an act of the New York Legislature, passed at its last session, the question, whether Free Schools shall be established throughout the State, is to be submitted to the decision of the people, to be determined by ballot, at their primary meetings, during the current year.

THE SOURCES OF PROPERTY.

To any one who looks beyond the mere surface of things, it is obvious that the primary and natural elements or ingredients of all property consist in the riches of the soil, in the treasures of the sea, in the light and warmth of the sun, in the fertilizing clouds, and streams, and dews, in the winds, and in the chemical and vegetative agencies of nature. In the majority of cases, all that we call *property*, all that makes up the valuation or inventory of a nation's capital, was prepared at the creation, and was laid up of old in the capacious storehouses of nature. For every unit that a man earns by his own toil or skill, he receives hundreds and thousands, without cost and without recompense, from the All-bountiful Giver. A proud mortal, standing in the midst of his luxuriant wheat-fields or cotton plantations, may arrogantly call them his own; yet what barren wastes would they be, did not Heaven send down upon them its dews and its rains, its warmth and its light; and sustain, for their growth and ripening, the grateful vicissitude of the seasons! It is said that from eighty to ninety per cent. of the very substance of some of the great staples of agriculture are not taken from the earth, but are absorbed from the air; so that these productions may more properly be called fruits of the atmosphere than of the soil. Who prepares this elemental wealth? Who scatters it, like a sower, through all the regions of the atmosphere, and sends the richly-freighted winds, as His messengers, to bear to each leaf in the forest, and to each blade in the cultivated field, the nourishment which their infinitely-varied needs demand? Aided by machinery, a single manufacturer performs the labor of hundreds of men. Yet what could he accomplish without the weight of the waters which God causes ceaselessly to flow? or without those gigantic forces which He has given to steam? And how would the commerce of the world be carried on, were it not for those great laws of nature,—of electricity, of condensation, and of rarefaction,—that give birth to the winds, which, in conformity to the will of Heaven, and not in obedience to any power of man, forever traverse the earth, and offer themselves as an unchartered medium for interchanging the products of all the zones? These few references show how vast a proportion of all the wealth which men presumptuously call their own, because they claim to have earned it, is poured into their lap, unasked and unthanked for, by the Being so infinitely gracious in his physical as well as in his moral bestowments.

But for whose subsistence and benefit were these exhaustless treasuries of wealth created? Surely not for any one man, nor for any one generation; but for the subsistence and benefit of the whole race, from the beginning to the end of time.

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THE BOUNTIES OF NATURE THE EQUAL INHERITANCE OF ALL HUMAN BEINGS.

They were created for the race, collectively, but to be possessed and enjoyed in succession, as the generations, one after another, should come into existence;— equal rights, with a successive enjoyment of them! If we consider the earth and the fulness thereof as one great habitation or domain, then each generation, subject to certain modifications for the encouragement of industry and frugality,— which modifications it is not necessary here to specify,— has only a life-lease in them. There are certain reasonable regulations, indeed, in regard to the out-going and the in-coming tenants,— regulations which allow to the out-going generations a brief control over their property after they are called upon to leave it, and which also allow the in-coming generations to anticipate a little their full right of possession. But, subject to these regulations, nature ordains a perpetual entail and transfer, from one generation to another, of all property in the great, substantive, enduring elements of wealth;— in the soil; in metals and minerals; in precious stones, and in more precious coal, and iron, and granite; in the waters, and winds, and sun;— and no one man, nor any one generation of men, has any such title to, or ownership in, these ingredients and substantials of all wealth, that his right is invaded when a portion of them is taken for the benefit of posterity. * * *

He then proceeds to place the argument for the universal education of the children of any given generation, upon the broad, impregnable basis of natural right, which he thus buttresses with the following incontestable propositions:

Now, all these great principles of natural law, which define and limit the rights of neighbors and contemporaries, are incorporated into. and constitute a part of, the civil law of every civilized people, and they are obvious and simple illustrations of the great proprietary laws by which individuals and generations hold their rights in the solid substance of the globe, in the elements that move over its surface, and in the chemical and vital powers with which it is so marvellously endued. As successive owners on a river's bank have equal rights to the waters that flow through their respective domains, subject only to the modification that the proprietors nearer the stream's source must have precedence in the enjoyment of their rights over those lower down, so the rights of all the generations of ma kind to the earth itself, to the streams that fertilize it, to the winds that purify it, to the vital principles that animate it, and to the reviving light, are common rights, though subject to similar modifications in regard to the preceding and succeeding generations of men. They did not belong to our ancestors in perpetuity; they do not belong to us in perpetuity; and the right of the next generation in them will be limited and defeasible like ours. As we hold these rights subject to the claims of the next generation, so will they hold them subject to the claims of their immediate successors, and so on to the end of time. * * *

Is not the inference irresistible, then, that no man, by whatever means he may have come into possession of his property, has any natural right, any more than he has a moral one, to hold, it or to dispose of it, irrespective of the needs and claims of those, who, in the august procession of the generations, are to be his successors on the stage of existence? Holding his rights subject to their rights, he is bound not to impair the value of their inheritance, either by commission or by omission. * * *

THE POSSESSIONS OF THE PRESENT LARGELY INHERITED FROM THE PAST.

Another consideration, bearing upon this arrogant doctrine of absolute ownership or sovereignty, has hardly less force than the one just expounded. We have seen how insignificant a portion of any man's possessions he can claim, in any proper and just sense, *to have earned;* and that, in regard to all the residue, he is only taking his turn in the use of a bounty bestowed, in common, by the Giver of all upon his ancestors, upon himself, and upon his posterity,— a line of indefinite length, in which he is but a point. But this is not the only deduction to be made from his assumed rights. The *present* wealth of the world has an additional element in it. Much of all that is capable of being earned by man, has been earned by our predecessors, and has come down to us in a solid and enduring form. We have not erected all the homes in which we live; nor constructed all the roads on which we travel; nor built all the ships in which we carry on our commerce with the world. We have not reclaimed from the wilderness all the fields whose harvests we now reap; and if we had no precious metals. or stones, or pearls, but such as we ourselves had dug from the mines, or brought up from the bottom of the ocean, our coffers and our caskets would be empty indeed. But even if this were not so, whence came all the arts and sciences, the discoveries and the inventions, without which, and without a common right to which, the valuation of the property of a whole nation would scarcely equal the inventory of a single man,— without which, indeed, we should now be in a state of barbarism? Whence came a knowledge of agriculture, without which we should have so little to reap; or a knowledge of astronomy, without which we could not traverse the ocean; or a knowledge of chemistry and mechanical philosophy, without which the arts and trades could not exist? Most of all this was found out by those who have gone before us, and some of it has come down to us from a remote antiquity. Surely all these boons and blessings belong as much to posterity as to ourselves. They have not descended to us to be arrested and consumed here, or to be sequestrated from the ages to come. Cato, and Archimedes, and Kepler, and Newton, and Franklin, and Arkwright, and Fulton, and all the bright host of benefactors to science and art, did not make or bequeath their discoveries or inventions to benefit any one generation, but to increase the common enjoyments of mankind to the end of time. So of all the great lawgivers and moralists who have improved the civil institutions of the State, who have made it dangerous to be wicked, or,— far better than this,— have made it hateful to be so. Resources developed, and property acquired, after all these ages of preparation, after all these facilities and securities, accrue not to the benefit of the possessor only, but to that of the next and of all succeeding generations.

Surely, these considerations limit still more extensively that absolutism of ownership which is so often claimed by the possessors of wealth.

But sometimes, the rich farmer, the opulent manufacturer, or the capitalist, when sorely pressed with his natural and moral obligation to contribute a portion of his means for the education of the young, replies,— either in form or in spirit,— "My lands, my machinery, my gold, and my silver, are mine; may I not do what I will with my own?" There is one supposable case, and only one, where this argument would have plausibility. If it were made by an isolated, solitary being,— a being having no relations to a community around him, having no ancestors to whom he had been indebted for ninety-nine parts in every hundred of all he possesses, and expecting to leave no posterity after him,— it might not be easy to answer it. * * *

THE DUTIES INCUMBENT ON EACH GENERATION OF MEN.

The earth is much too small, or the race is far too numerous, to allow us to be hermits; and, therefore, we cannot adopt either the philosophy or the morals of hermits. All have derived benefits from their ancestors, and all are bound, as by an oath, to transmit those benefits, even in an improved condition, to posterity. * * * . The society of which we necessarily constitute a part, must be preserved; and, in order to preserve it, we must not look merely to what one individual or one family needs, but to what the whole community needs; not merely to what one generation needs, but to the wants of a succession of generations. To draw conclusions without considering these facts, is to leave out the most important part of the premises.

A powerfully corroborating fact remains untouched. Though the earth and the beneficent capabilities with which it is endued belong in common to the race, yet we find that previous and present possessors have laid their hands upon the whole of it;—have left no part of it unclaimed and unappropriated. They have circumnavigated the globe; they have drawn lines across every habitable portion of it, and have partitioned amongst themselves, not only its whole area, or superficial contents, but have claimed it down to the centre, and up to the concave,—a great, inverted pyramid for each proprietor,—so that not an unclaimed rood is left, either in the caverns below or in the aërial spaces above, where a new adventurer upon existence can take unresisted possession. They have entered into a solemn compact with each other, for the mutual defence of their respective allotments. They have created legislators, and judges, and executive officers, who denounce and inflict penalities even to the taking of life; and they have organized armed bands to repel aggression upon their claims. Indeed, so grasping and rapacious have mankind been, in this particular, that they have taken more than they could use, more than they could perambulate and survey, more than they could see from the top of the mast-head, or from the highest peak of the mountain. There was some limit to their physical power of taking possession, but none to the exorbitancy of their desires. Like robbers, who divide their spoils before they know whether they shall find a victim, men have claimed a continent while still doubtful of its existence, and spread out their title from ocean to ocean, before their most adventurous pioneers had ever seen a shore of the realms they coveted. The whole planet, then, having been appropriated,—there being no waste or open lands, from which the new generations may be supplied as they come into existence,—have not those generations the strongest conceivable claim upon the present occupants for that which is indispensable to their well being? They have more than a preëmptive, they have a possessory right to some portion of the issues and profits of that general domain, all of which has been thus taken up and appropriated. A denial of this right by the present possessors, is a breach of trust,—a fraudulent misuse of power given, and of confidence implied. On mere principles of political economy, it is folly; on the broader principles of duty and morality, it is embezzlement. * * * .

THE CLAIMS OF CHILDREN UPON THEIR PRECEDING GENERATION.

If the previous argument began with sound premises and has been logically conducted, then it has established this position,—that a vast portion of the present wealth of the world either consists in, or has been immediately derived from, those great natural substances and powers of the earth which were bestowed by the Creator alike on all mankind; or from the discoveries, inventions, labors, and improvements of our ancestors, which were alike designed for the common benefit of all their descendants. The question now arises, *at what time* is this wealth to be transferred from a preceding to a succeeding generation? At what point are the latter to take possession of it, or to derive benefit from it, or at what time are the former to surrender it in their behalf? Is each generation, and each individual of an existing generation, to hold fast to his possessions until death relaxes his grasp? or is something of the right to be acknowledged, and something of the benefit to be yielded, beforehand? It seems too obvious for argument, that the latter is the only alternative. If the in-coming generation have no rights until the out-going generation have actually retired, then is every individual that enters the world liable to perish on the day he is born. According to the very constitution of things, each individual must obtain sustenance and succor, as soon as his eyes open in quest of light, or his lungs gasp for the first breath of air. His wants can not be delayed until he himself can supply them. If the demands of his nature are ever to be answered, they must be answered years before he can make any personal provision for them, either by the performance of any labor, or by any exploits of skill. The infant must be fed before he can earn his bread; he must be clothed before he can prepare garments; he must be protected from the elements before he can erect a dwelling; and it is just as clear that he must be instructed before he can engage or reward a tutor. A course contrary to this, would be the destruction of the young, that we might rob them of their rightful inheritance. Carried to its extreme, it would be the act of Herod, seeking, in a general massacre, the life of one who was supposed to endanger his power. Here, then, the claims of the succeeding generation, not only upon the affection and the care, but upon the *property*, of the preceding one, attach. God having given to the second generation as full and complete a right to the incomes and profits of the world as he has given to the first, and to the third generation as full and complete a right as he has given to the second, and so on while the world stands,—it necessarily follows that children must come into a partial and qualified possession of these rights, by the paramount law of nature, as soon as they are born. No human enactment can abolish or countervail this paramount and supreme law; and all those positive and often arbitrary enactments of the civil code, by which, for the encouragement of industry and frugality, the possessor of property is permitted to control it for a limited period after his decease, must be construed and executed in subservience to this sovereign and irrepealable ordinance of nature.

Nor is this transfer always, or even generally, to be made *in kind;* but according to the needs of the recipient. The recognition of this principle is universal. * * * . A child has interests far higher than those of mere physical existence. Better that the wants of the natural life should be disregarded than that the higher interests of the character should be neglected. If the child has any claim to bread to keep him from perishing, he has a far higher claim to knowledge to preserve him from error and its fearful retinue of calamities. If a child has any claim to shelter to protect him from the destroying elements, he has a far higher claim to be rescued from the infamy and perdition of vice and crime. * * * .

THE CHILD'S CLAIM TO EDUCATION PARAMOUNT.

As the right of sustenance is of equal date with birth, so the right to intellectual and moral training begins at least as early as when children are ordinarily sent to school. At that time, then, by the irrepealable law of nature, every child succeeds to so much more of the property of the community as is necessary for his education. He is to receive this, not in the form of lands or of gold and silver, but in the form of knowledge and a training to good habits. This is one of the steps in the transfer of property from a present to a succeeding generation. Human sagacity may be at fault in fixing the amount of property to be transferred, or the time when the transfer should be made, to a dollar or to an hour, but certainly, in a republican government, the obligation of the predecessors, and the right of the successors, extend to and embrace the means of such an amount of education as will prepare each individual to perform all the duties which devolve upon him as a man and a citizen. It may go further than this point; certainly, it cannot fall short of it.

Under our political organization, the places and the processes where this transfer is to be provided for, and its amount determined, are the district school meeting, the town meeting, legislative halls, and conventions for establishing or revising the fundamental laws of the state. If it be not done there, society is false to its high trusts; and any community, whether national or state, that ventures to organize a government, or to administer a government already organized, without making provision for the free education of all its children, dares the certain vengeance of Heaven; and, in the squalid forms of poverty and destitution, in the scourges of violence and misrule, in the heart-destroying corruptions of licentiousness and debauchery, and in political profligacy and legalized perfidy,—in all the blended and mutually aggravated crimes of civilization and of barbarism, will be sure to feel the terrible retributions of its delinquency. * * * .

He then sums up the principles on which the grand system of popular education must rest. Principles on which the system of a continent, or of the world, can be securely based. Principles as universal as Man, as enduring as Time.

THE BASIS OF COMMON SCHOOLS.

The three following propositions, then, describe the broad and everduring foundation on which the Common School system of Massachusetts reposes:—

The successive generations of men, taken collectively, constitute one great commonwealth.

The property of this commonwealth is pledged for the education of all its youth, up to such a point as will save them from poverty and vice, and prepare them for the adequate performance of their social and civil duties.

The successive holders of this property are trustees, bound to the faithful execution of their trust, by the most sacred obligations; and embezzlement and pillage from children and descendants have not less of criminality, and have more of meanness than the same offences when perpetrated against contemporaries.

Recognizing these eternal principles of natural ethics, the Constitution of Massachusetts,—the fundamental law of the State,—after declaring, (among other things,) in the preamble to the first section of the fifth chapter, that "the encouragement of arts and sciences, and all good literature, tends to the honor of God, the advantage of the Christian religion, and the great benefit of this and the other United States of America," proceeds, in the second section of the same chapter, to set forth the duties of all future legislators and magistrates, in the following noble and impressive language:—

"Wisdom and knowledge, as well as virtue, diffused generally among the body of the people, being necessary for the preservation of their right and liberties; and as these depend on spreading the opportunities and advantages of education in the various parts of the country, and among the different orders of the people, it shall be the duty of legislatures and magistrates, in all future periods of this Commonwealth, to cherish the interests of literature and the sciences, and all seminaries of them, especially the University of Cambridge, Public Schools, and Grammar Schools in the towns; to encourage private societies and public institutions, rewards and immunities, for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and a natural history of the country; to countenance and inculcate the principles of humanity and general benevolence, public and private charity, industry and frugality, honesty and punctuality in their dealings; sincerity, good humor, and all social affections, and generous sentiments among the people." (See also Rev. St., ch. 23, sec. 7.)

The account of the legal enactments in regard to public instruction, with an exposition of their bearing, which follows, fills more than a hundred pages. This is followed by a concise statement of what the State does "to make industry the antidote of poverty, and to counterwork the progress of vice and crime by the diffusion of knowledge and the culture of virtuous principles."

A statement of the provision made by the State for the care of the sick, for the education of the afflicted in asylums, and for public education, follows. After the recital of these facts, Mr. Mann shows how it has been possible for a State, although confined within such narrow domains and so limited in natural resources, to accomplish such an educational work and to undertake such splendid charities.

WHAT MASSACHUSETTS SPENDS FOR PUBLIC EDUCATION AND BENEVOLENCE.

For public, free education alone, including the direct outlay of money, and the interest on capital invested, Massachusetts expends, annually, more than a million of dollars. * * * .

Whence come her means to give, with each returning year, more than a million of dollars to public education; more than another million to religion; and more than a third to ameliorate and succor the afflicted and the ignorant at home, and to bless, in distant lands, those who sit in the region and shadow of death? How does she support her poor, maintain her public ways and contribute such vast sums for purposes of internal improvement, besides maintaining her immense commercial transactions with every zone in the world?

Has she a vast domain? Her whole territory would not make a court-yard of respectable dimensions to stand in front of many of the States and Territories belonging to the Union.

Does she draw revenues from conquered provinces or subjugated realms? She conquers nothing, she subdues nothing, save the great elemental forces of nature, which God gives freely, whenever and wherever they are asked for in the language of genius and science; and in regard to which no profusion or prodigality to one can diminish the bounty always ready for others.

Does she live by the toil of a race of serfs and vassals whom she holds in personal and hereditary bondage,—by one comprehensive and soveign act of violence seizing upon both body and soul at once, and superseding the thousand acts of plunder which make up the life of a common robber? Every man who treads her sacred soil is free; all are free alike; and within her borders, for any purpose connected with human slavery, iron will not be welded into a fetter.

Whence then, I again ask, comes her wealth?—I do not mean the gorgeous wealth which is displayed in the voluptuous and too often enervating residences of the affluent, but that *golden mean* of property,—such as Agur asked for in his perfect prayer,—which carries blessings in its train to thousands of householders; which spreads solid comfort and competence through the dwellings of the land; which furnishes the means of instruction, of social pleasures and refinement, to the citizens at large; which saves from the cruel sufferings and the more cruel temptations of penury. The families, scattered over her hills and along her valleys, have not merely a shelter from the inclemencies of the seasons, but the sanctuary of a home. Not only food, but books, are spread upon their tables. Her commonest houses have the means of hospitality; they have appliances for sickness, and resources laid up against accident and the infirmities of age. Whether in her rural districts or her populous towns, a wandering, native-born beggar is a prodigy, and the twelve millions of dollars deposited in her Savings' Institutions do not more loudly proclaim the frugality and providence of the past, than they foretell the competence and enjoyments of the future.

EDUCATION THE SOURCE OF WEALTH.

One copious, exhaustless fountain supplies all this abundance. It is education,—the intellectual, moral, and religious education of the people. Having no other mines to work, Massachusetts has mined into the human intellect, and, from its limitless resources, she has won more sustaining and enduring prosperity and happiness than if she had been founded on a stratification of silver and gold, reaching deeper down than geology has yet penetrated. . Mingling skill and intelligence with the daily occupations of life, she has made labor honorable; and, as a necessary consequence, idleness is disgraceful. Knowledge has been the ambition of her sons, and she has reverenced and venerated the purity and chastity of her matrons and her daughters. . He who studies the present or the historic character of Massachusetts will see,—and he who studies it most profoundly will see most clearly,—that whatever of abundance, of intelligence, or of integrity, whatever of character at home or of renown abroad she may possess,—all has been evolved from the enlightened, and at least partially Christianized mind, not of a few, but of the great masses of her people. They are not the result of outward riches or art brought around it, or laminated over it, but of an awakened inward force, working energetically outwards, and fashioning the most intractable circumstances to the dominion of its own desires and resolves; and this force has been awakened and its unspent energies replenished, more than from all things else, by her Common Schools.

THE WORTH OF INDUSTRIAL KNOWLEDGE.

* * * . But were there any statistics to show the aggregate value of all the thrifty and gainful habits of the people at large;—the greater productiveness of the educated than of the brutified laborer; the increased power of the intelligent hand and the broad survey and deep intuition of the intelligent eye;—could we see a leger account of the profits which come from forethought, order, and system, as they preside over all our farms, in all our workshops, and emphatically in all the labors of our households,—we should then know how rapidly their gathered units swell into millions upon millions. The skill that strikes the nail's head, instead of the finger's end; the care that mends a fence and saves a cornfield, that drives a horseshoe nail and secures both rider and horse, that extinguishes a light and saves a house; the prudence that cuts the coat according to the cloth, that lays by something for a rainy day, and that postpones marriage until reasonably sure of a livelihood; the forethought that sees the end from the beginning, and reaches it by the direct route of an hour instead of the circuitous gropings of a day; the exact remembrance impressed upon childhood to do the errand as it was bidden; and, more than all, the economy of virtue over vice; of restrained over pampered desires;—these things are not set down in the works on Political Economy; but they have far more to do with the Wealth of Nations than any laws which aim to regulate the balance of trade, or any speculations on capital and labor, or any of the great achievements of art. That vast variety of ways in which an intelligent people surpass a stupid one, and an exemplary people an immoral one, has infinitely more to do with the well-being of a nation, than soil, or climate, or even than government itself, excepting so far as government may prove to be the patron of intelligence and virtue.

> From her earliest colonial history, the policy of Massachusetts has been to develop the minds of all her people, and to imbue them with the principles of duty. To do this work most effectually, she has begun it with the young. If she would continue to mount higher and higher towards the summit of prosperity, she must continue the means by which her present elevation has been gained. In doing this, she will not only exercise the noblest prerogative of government, but will coöperate with the Almighty in one of his sublimest works.

After these eloquent statements by Mr. Mann, it will be not without interest in this connection, to listen to another loving son of the State; who, long ago, told in his spirited verses the secret of the strength of Massachusetts. I refer to the lines by Whittier, in which the characteristic conditions and the lofty ideals of the State are so tersely given, in the poem entitled:

OUR STATE.

The South-land boasts its teeming cane,
The prairied West its heavy grain,
And sunsets' radiant gates unfold
On rising marts and sands of gold!

Rough, bleak, and hard, our little State,
Is scant of soil, of limits strait;
Her yellow sands are sands alone,
Her only mines are ice and stone!

From Autumn frost to April rain,
Too long her winter woods complain;
From budding flower to falling leaf,
Her summer time is all too brief.

Yet, on her rocks, and on her sands,
And wintry hills, the school house stands,—
And what her rugged soil denies,
The harvest of the mind supplies.

The riches of the Commonwealth
Are free, strong minds, and hearts of health;
And more to her than gold or grain
The cunning hand and cultured brain.

For well she keeps her ancient stock,
The stubborn strength of Pilgrim Rock;
And still maintains, with milder laws,
And clearer light, the good old cause!

Nor heeds the sceptic's puny hands
While near her school the church spire stands;
Nor fears the blinded bigot's rule,
While near her church spire stands the school.

JOHN GREENLEAF WHITTIER.

In proof that these estimates of the poverty of natural resources, and of the incalculable value to the community of the general prevalence of education among the people of New England, are neither overdrawn, or only held by the sons of Massachusetts, the following quotations seem pertinent.

These striking confirmatory sentences, given below, are taken from a leading article in a recent number of The London Times, (January 14, 1888), in which the writer comments on a notable series of descriptive letters which, begun the previous September, are brought to a close in that issue. These interesting and admirable letters were written by a special correspondent during a tour in the "States";—

for the most part through the Atlantic States, from Plymouth Rock to Mount Vernon; though Pittsburgh and Chicago were also visited.

The testimony borne in this article to the high character of the common people of New England,—those "nameless corner stones of American Independence," to whom, many years ago, the great Hungarian exile, speaking in the shadow of the monument on Bunker Hill, so eloquently paid homage,— and the full recognition of the fact that New England was the rude nurse, who, with scanty means, bred for generations a stalwart race of intelligent, industrious and forceful men; is of interest and value, in evidence that to-day the judgment of the world confirms that of the native writers just quoted. In illustrating his proposition that it is in New England, that the springs and sources of the after development of the American people are primarily to be sought, this editorial writer points out that the various early settlements by the English colonists in Massachusetts possessed and perpetuated individual characteristics; Boston and Salem, for instance, though very near each other, being then more unlike than the cities of Boston and Chicago are to-day, though the latter are a thousand miles apart. After reference to the wonderful growth and varied development of the United States, to a realization of which, the English people seem at last to have awakened, he says:

> The clue to the making of the United States is to be sought not so much at New York, Pennsylvania, or Chicago, as in the little New England towns, with their Puritan chapels and their elm arcaded streets. They would go but a little way towards solving the problem if they were, as is popularly supposed, all of the self same texture. The miracle of the indefatigable and inexhaustible elasticity of the American character would then remain still unexplained. An observer need but travel up and down New England, and examine for himself, as our Correspondent has travelled and examined; he will discover a perfect magazine of distinct powers, tendencies, and ambitions, out of which for generations America has drawn the engines for appropriating and realizing the mine of wealth reserved by nature for the enjoyment of the Anglo-Saxon race. New England has contributed its full share to the profession of politics. The list contains many distinguished names besides that of Daniel Webster, whom our correspondent extols, perhaps with some exaggeration. In other and less tumultuous departments of intelligence New England has been ever in the front of national progress. In literature, law, theology and science it represents America to the world. Yet the New Englanders who have achieved acknowledged renown, the Emersons, Longfellows, Hawthornes, Bancrofts, Websters, Lowells, Prescotts, Motleys, have done less for the nation than the rank and file of their countrymen, unrecorded and unknown.
>
> The hungry soil to which the *Mayflower* brought its pilgrims is a better mother of keen brave men than caterer to their material wants.
>
> Massachusetts and the sister (New England) States have been a perpetual nursery whence the Continent has supplied itself with pioneers of industry and agriculture. Whatever the diversity of treatment the infinite variety of American circumstances required, the exact instrument demanded has always been found ready in the arsenal of New England shrewdness, stubbornness and mother wit.

In some respects the "Twelfth and Last Annual Report,"* is the most notable in the series. In this Report Mr. Mann, after a most interesting review of the labors and duties undertaken by himself as Secretary of the State Board of Education during the twelve years that had elapsed since when, in 1837, the Board was first organized,— thus giving an account of his stewardship, with its suggestive history of the improvement and development of the common schools of the

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*"Twelfth Annual Report of the Board of Education together with the Twelfth Annual Report of the Secretary of the Board. Boston: Dutton and Wentworth, State Printers, No. 37, Congress Street. 1849. Pp. 155 & Lx."

State, and also a résumé of the legislation relating to them,—proceeds to an extended discussion of the principles underlying this education. He discusses once more the question of the free education of the children by the State in all its varied relations. Read in the light of the history of the last forty years, his utterances seem, indeed, to have had "something of a prophetic strain." His arguments apply to the situation of to-day, even more forcibly than to the conditions existing when they were uttered; for the evils he then foresaw as possible, are upon us. His illustrations of the need for Massachusetts to make up by the superior education of her citizens, for her diminishing relative importance in the country; owing to the rapid increase in the total population of the United States, are certainly not *less* striking, now that a total of sixty millions is conceded, than when that total stood for but one-third of these millions.

While, as was peculiarly fitting, he draws his illustrations from the state of things existing in Massachusetts and makes his direct appeals to the citizens of that little State; still, his arguments are so based on enduring and universal principles that they are as applicable to-day in each and every State of the Union, as they were then to the citizens of Massachusetts.

No more unanswerable reply can be made to the sophistries advanced by the socialists and anarchists of to-day, than are to be found in these pages. He shows that the wealth of a country is not a constant quantity; therefore, it can not be equally or equitably divided. On the other hand he demonstrates that education *is* a *creator* of wealth, so that, by educating its citizens, a country vastly increases its power of production; he illustrates this by most original and ingenious suggestions. While property can not be divided up equally among all citizens; the opportunities for education,—which shall give to every child increased capacity for the production and, therefore, for the acquisition of property,—can be equally divided. Every child *can* be fed with knowledge at the public school. This by no means implies, as some opponents of free common schools erroneously assert, that Horace Mann thought that all children had equal mental capacity; still less, that he sought by means of these common schools to make men all of uniform pattern. Far from it! His claim is simply that, as all citizens have equal rights before the public courts of law; so, on the like grounds of equal and exact justice, he would have all children offered equal opportunities in free public schools. It is evident that Mr. Mann must have equally advocated industrial and technical training, had these latest phases of educational evolution been foreseen in his day; for the whole trend of his argument in reference to the material advantages of education, goes to justify such direction of educational forces.

His discussion of these topics fills over a hundred pages. In selecting from this rich storehouse the difficulty is, not what to admit, but what to exclude.

The opening pages of this report, are transparent to the character and motives of this remarkable man, whose deep religious nature and whose devotion to the duties he had undertaken, are in them clearly manifest. The educational situation throughout the State, previous to the establishment of the Board of Education, is so plainly and succinctly stated, that these pages have a permanent historical value; while all the annual reports of the Secretary, are illumined and emphasized by this autobiographical statement of the conditions under which his labors were begun and continued. It is here seen that Mr. Mann, and his firm supporters, the members of the State Board of Education, began and carried through a remarkable educational revolution and reformation, the magnitude of which is to be measured in part by the obstacles that were to be overcome.

The modern free school systems of the several States of the United States date from this era. The changes, now for the past few years, so earnestly urged by the advocates of Industrial Education, to keep, as they claim, these schools in step with the progress of the race; beginning, as they did, with the Boston movement for Industrial Art Drawing in 1870, are urged, as logically in line with the innovations first introduced by Horace Mann.

It will be seen from the moderate statements by Mr. Mann, that the work then undertaken was no easy task; every advance was made in the face of public indifference if not of active opposition.

The following passages, from the "twelfth annual report of the Board of Education," are given as showing the hearty coöperation of the Board with the aims and efforts of the Secretary.

TWELFTH ANNUAL REPORT OF THE BOARD OF EDUCATION.

The Board of Education, in presenting to the Legislature their Twelfth Annual Report, are happy in being able to speak of the continued prosperity of the schools of this Commonwealth, and of the continued interest manifested, on the part of the people, in the cause of universal education. This is, emphatically, one of the great interests of the State; and, so long as the successive generations that spring up here are moral and intelligent, so long we are sure our prosperity will continue. * * * .

In the early part of the year, Hon. Horace Mann, the Secretary of the Board, was elected to fill the place in the Congress of the United States, vacated by the death of the Hon. John Quincy Adams. It was with deep regret we received his resignation in May last. Not being prepared, at that time, to appoint a successor, he was requested to perform the duties of the office until the annual meeting, and prepare the report, which accompanies this of the Board.

We need not say, that Mr. Mann has faithfully performed the duties of the office he has held, for twelve years, and thoroughly aroused the people of this Commonwealth to the importance of Common School education. He has devoted himself to this great work with a noble, self-denying zeal, and has enstamped his name so deeply on the educational interests of the State, that it will never be effaced. It has been his lot, in common with all others ardently devoted to plans for promoting human welfare, to be looked upon with suspicion by some, and to encounter opposition; but this Board feel assured, that he has honestly labored to raise the standard of intellectual and moral education, uninfluenced by any sinister motive. In parting with one, who has performed a good service for the State, we deem it a pleasure, as well as a duty, to bear this, our public testimony, to the fidelity and good faith with which he has performed the duties of his office.

* * * In conclusion, we should respectfully call the attention of the members of the Legislature to some statements appended to the Secretary's Report, respecting the onerous duties of that office, and the difficulties attending the performance of them. We would also invite the attention of the people generally to a consideration of what has been done the last twelve years, and to the position of Massachusetts in this great Confederacy of States, and the importance of giving to all the children a thorough and moral education.

All of which is respectfully submitted.

BOSTON, *Nov.* 24th, 1848.

GEO. N. BRIGGS,
JOHN REED,
H. HUMPHREY,
S. C. PHILLIPS,
H. B. HOOKER,
THOS. KINNICUTT,
EMERSON DAVIS,
JOHN A. BOLLES,
GEO. B. EMERSON.

The Report of the Secretary follows:

To the Board of Education:

GENTLEMEN:—Having unconditionally declined a reëlection to the office of Secretary, this will be my Twelfth and last Annual Report. * * * .

It is with emotions, "mournful yet pleasing to the soul," that I take a retrospect of the twelve years, which are now drawing to a close. This portion of time is no inconsiderable part of the life of a man. Of the life of a child,—of that educational and formative period, which goes so far towards determining what the man shall be,—it is the principal part. It covers the entire period between the age of four and that of sixteen years,—that period during which the children of the State are considered as properly "due to the school." It measures, therefore, the life of a generation of school-going children. Nineteen-twentieths of all the children in Massachusetts, who, in the year 1837, were entering the school for the first time, are now about leaving it, or have already left it, for the last. * * * .

Who that has had any agency in determining issues so momentous, can look back upon his past course, without the most solemn questionings, whether all has been done that could have been done, to guide the devious footsteps of these youth in the paths of worldly rectitude and honor, and towards the goal of a happy immortality! Who that contrasts his own best exertions, with the magnitude and preciousness of the interests confided to his care, will not bend low in humiliation, and supplicate the Father of Mercies to supply the deficiencies of the creature's work, from the exhaustless fullness of the Creator!

From the Board of Education, between whom and myself, for so long a period, such intimate and confidential relations have subsisted, I cannot part without an expression of grateful remembrance. The measure of courtesy and kindness, which they, as a body, have extended towards me, in our official relations, has been what I could desire, rather than demand. But this is one of the least important of all the consequences that have attended, or might have attended, our relations. I feel that had it not been for their confidence in me, and support of me, during some of the years of doubt and struggle, through which I have passed, this educational enterprise would have proved a failure in my hands; and thus, my name, in one of the noblest of all human undertakings, would have been connected with the dishonor of a defeat, or with the ridicule that pursues a visionary schemer. A brief explanation will make this apparent.

THE SITUATION WHEN MR. MANN WAS FIRST MADE SECRETARY OF THE BOARD.

When the duties of the Secretaryship were first assumed, two courses lay open before me. The one was, to treat the people of the State and the school system of the State, as "having already attained;"—to praise teachers for skill in an art, which they had possessed no opportunity to acquire, and school committees for vigilance and fidelity in the discharge of obnoxious duties, for which public opinion awarded no honor, and the law no compensation,—not even a reimbursement of necessary expenses;—to applaud towns for the "munificence" of those appropriations which just kept the breath of life in the schools though sometimes failing to do even this; and to challenge honor and fame in behalf of school districts, for the elegance and completeness of their schoolhouse architecture, and their school furniture;—or, in one word, with lulling flatteries to deepen the slumbers of an already sleeping community;—when, had they been roused by a peal corresponding to the depth of their lethargy and the imminence of their peril, an angel's voice must have sounded the trumpet.

Facts incontrovertibly show, that, for a series of years previous to 1837, the school system of Massachusetts had been running down. Schoolhouses had been growing old, while new ones were rarely erected. School districts were divided, so that each part was obliged to support its schools on the moiety of a fund, the whole of which was a scanty allowance. It was found that children could be profitably employed in many kinds of labor,—in factories, in the shoe-making business, and in other mechanical employments; and this swelled the enormous amount of nonattendance and irregularity. The multiplicity of different books in the same school embarrassed all kinds of instruction. The business of school-keeping fell more and more into the hands of youth and inexperience; so that, in rare instances only, did the maturity of years preside over the indiscretions of the young. Not only so, but the average time during which teachers continued in the business of school-keeping, was shortened; so that the children suffered under the perpetual renewals and unskilfulness of first experiments. The final dissolution, in 1833, of territorial parishes, loosened, and often wholly severed, those bonds by which clergymen had before considered themselves attached to the schools, and obligated to superintend them, as a part of their parochial duty. To crown the whole, and to aggravate the deterioration which it proved to exist, the privato school system was rapidly absorbing the funds, patronizing the talent, and withdrawing the sympathy, which belonged to the Public Schools. All these things were undeniably true, and yet the Secretary, in reporting upon our school system from year to year, might have concealed or palliated these steps of declension and prognostics of ultimate ruin; he might have conspicuously set forth whatever remained of hope or of promise, and the general indifference of the public would have made the imposture easy.

THE COURSE PURSUED BY THE NEW SECRETARY.

The other course led in a direction diametrically opposite. It counselled an energetic and comprehensive system of Popular Education, good enough for the richest, open to the poorest; — such a system as should not only be worthy of the past fame of Massachusetts, but creative of future prosperity and renown. The intelligence of the State was to be invoked to justify such a system, and its liberality to support it. Improvements were to be sought for, whether to be found at home or abroad; and to be adopted with equal alacrity, whether coming from proud Jerusalem or from despised Nazareth. The incompetency of teachers was to be exposed in a spirit of justice, tempered with kindness; — for, that union of justice and kindness which leads a man to abandon his error, or supply his shortcomings, is the loveliest form of mercy. Committees were to be informed and stimulated, that they might both know and discharge their duty. Money, for the more liberal payment of teachers, was to be won from the pockets of the wealthy by persuasion, or exacted by law. By appeals to duty, to decency, and to parental love; by rebuke or by ridicule; by any means not absolutely criminal; all that class of wretched, pain-inflicting, disease-creating structures, called schoolhouses, was to be swept from the face of the State; — a work, which, could it have been consummated at once, would not have left a hundred schoolhouses standing in the Commonwealth.

THE ALTERNATIVE.

The former of these courses would, for a time, have been ignobly popular. The latter was imminently perilous. But duty left no option. The only way to end prosperously, was to begin righteously. It was, however, easy to be foreseen, that vigorous reformatory measures would arouse opposition. The penurious would resist taxation. The self-satisfied would disdain improvement. The slumbering would beat away the disturbers of their repose. The lovers of caste would repel the companionship of their social inferiors. All malecontents would unite to commend the old as time-hallowed and safe, and to condemn the new as utopian and dangerous.

TIME AN ESSENTIAL CONDITION TO THE SUCCESS OF EDUCATIONAL EXPERIMENTS.

Now, in the conflict between the Party of Progress and the Party of Retrogression or Stand-still, it is self-evident, that, if the Chinese doctrine of conservatism should prevail, the advocates of the new measures would be foreclosed, mid-way in their experiment. Time, an element indispensable to success, would be refused them; and thus, a failure, resulting solely from a want of opportunity to complete the trial, would have been attributed to the folly of the contrivers. It was at this crisis, that the support of the Board was of unspeakable value to me. Had I been discarded, at that critical juncture, I should have felt it as an injustice; because the odium and dishonor of a failure would have fallen upon those preliminary measures, which, if time had been allowed for their competition, would at least have had a chance to vindicate their author.

Detailed statements of all matters relating to the schools follow; these being completed, Mr. Mann considers and treats at length the several topics relating to the whole subject of public free education. It is due to his foresight and breadth of view that his arguments and conclusions are as important to the educators and legislatures of to-day as they were to his contemporaries.

THE CAPACITIES OF OUR PRESENT SCHOOL SYSTEM TO IMPROVE THE PECUNIARY CONDITION, AND TO ELEVATE THE INTELLECTUAL AND MORAL CHARACTER, OF THE COMMONWEALTH.

Massachusetts may be regarded either as a State, by herself, or as a member of a mighty and yet increasing confederacy of States. In the former capacity, she has great and abiding interests, which are mainly dependent upon her own domestic or internal policy. In the latter relation, her fate depends upon the will of her partners in the association. Hence, although in regard to all nations, the Minister for Foreign Affairs is the officer of first importance in the State, yet, in regard to our own Commonwealth, the Home Department has decided precedence.

DIMINISHING RELATIVE RATIO OF POPULATION AND OF COMPARATIVE SIZE.

As an individual State, the geographical extent of Massachusetts, and her civil and social interests, will remain the same; but when compared, or rather contrasted, with the vast domain, and the magnificent and overshadowing interests of the whole Union, she is, and from year to year must be, growing relatively less and less, and less. At the epoch of the Revolution, she was one of thirteen States. Now, she is one of thirty. Even so late as 1790, when the first census of the United States was taken, there were but three States whose population exceeded hers. Deducting slaves, of whom she had none, there were but two. Her population, at that time, amounted to about one-tenth part of the population of the whole Union. It is now much below one-twentieth. At the time, too, of the adoption of the Federal Constitution, the area of Massachusetts bore some assignable and palpable proportion to that of the whole United States. The Mississippi was then the western boundary of the nation. Now, our domain not only extends to the Pacific, but stretches through almost seventeen degrees of latitude upon that ocean. Florida then lay between us and the Gulf of Mexico; and the gates of the Mississippi River being liable at any time to be closed against the Western States, their only unobstructed egress to the Atlantic was through eastern ports. Now, the Gulf is our southern boundary; and the Mississippi and its tributaries with their more than sixteen thousand miles of waters navigable by steam, afford a channel capacious enough to drain the west of its vast productions, and then, with the refluent tide of commerce, to supply their demands for foreign merchandize. Territorially considered, the loss of Cape Cod, or of the few acres that compose the Islands of Nantucket and the Vineyard, would be greater to Massachusetts than the loss of Massachusetts would be to the Union. Our native and beloved State, indeed, seems contracting and dwindling away so fast as to suggest the idea of its more careful perambulation, to see if some clandestine and rapacious neighbor has not incurred the curse of the Mosaic law, by removing our land-marks inward and inward. It is only by taking Massachusetts as a unit, and comparing her area with that of other States in the Union, that we can realize how narrow and diminutive she is becoming. Ohio and Kentucky could each be divided into five States, and each of the ten would be larger than our own. New York, Pennsylvania, North Carolina, Alabama, Louisiana, Mississippi, and Tennessee, would each make considerably more than six States,—or the whole of them more than forty-two States,—of the size of Massachusetts. Michigan, Illinois, Iowa, Wisconsin, Georgia, and Arkansas, are each equal in territory to seven such States as ours,—amounting to another group of forty-two. Virginia and Florida are each equal to more than eight; Missouri is equal to nine. and Texas alone, according to the boundaries now claimed by her, would make forty-four such States. Taking an official estimate of the area of the United States, exclusive of the portion lately acquired from Mexico, it is divisible into three hundred and seventy-six such States as Massachusetts. The territory ceded by the treaty with Mexico, which was ratified on the thirtieth day of May last, exclusive of what is claimed by Texas, would make more than seventy-two States of equal dimensions. Hence it is plain that Massachusetts, territorially considered, constitutes, not exceeding in round numbers, one four hundred and forty-eighth part of the Union to which she belongs; or far less than the proportion which a single degree bears to the three hundred and sixty degrees of a circle. The bull's hide mentioned in Virgil's epic, would nearly enclose her.*

LACK OF MINERAL WEALTH AND OF NATURAL ADVANTAGES.

In other elements of national greatness,— in mineral resources, in productiveness of soil, and in natural facilities for internal intercourse,— she falls far below even this insignificant fraction. She has not an inland bay; not a navigable river; no gold is scattered among her sands; granite is her best mineral, and ice the only pearl to be found in her waters.

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* *Table exhibiting the areas of the several States and Territories of the United States in square miles and acres:*

Free States.	Square miles.	Acres.	Slave States.	Square miles.	Acres.
Maine	35,000	22,400,000	Delaware	2,120	1,356,800
New Hampshire	8,030	5,139,200	Maryland	11,000	7,040,000
Vermont	8,000	5,120,000	Virginia	61,352	39,265,280
Massachusetts	7,250	4,640,000	North Carolina	45,500	29,120,000
Rhode Island	1,200	768,000	South Carolina	28,000	17,920,000
Connecticut	4,750	3,040,000	Georgia	58,000	37,120,000
New York	46,000	29,440,000	Kentucky	37,680	24,115,200
New Jersey	6,851	4,384,640	Tennessee	44,000	28,160,000
Pennsylvania	47,000	30,080,000	Louisiana	46,431	29,715,840
Ohio	39,964	25,576,960	Mississippi	47,147	30,174,080
Indiana	33,809	21,637,760	Alabama	50,722	32,462,080
Illinois	55,405	35,459,200	Missouri	67,380	43,123,200
Michigan	56,243	35,995,520	Arkansas	52,198	33,406,720
Iowa	50,914	32,584,960	Florida	59,268	37,931,520
Wisconsin	53,924	34,511,360	Texas, (if hounded by Rio Grande,)	325,520	208,332,800
Total	454,340	290,777,600	District of Columbia	50	32,000
			Total	936,368	599,275,520

Territory north and west of ihe Mississippi River and east of the Rocky Mountains.

Description.	Miles.	Acres.
Bounded north by 49° north latitude; east, by Mississippi River; south, by the State of Iowa and Platte River, and west by the Rocky Mountains	723,248	462,878,720
Indian Territory, situated west of Arkansas and Missouri, and south of Platte River	248,851	159,264,640
Old North West Territory, balance remaining east of Mississippi River, and northwest of Wisconsin	22,336	14,295,040
Oregon Territory west of Rocky Mountains	341,463	218,536,320
Total of old territory not organized into States	1,335,898	854,974,720
California	448,691	287,162,240
New Mexico	77,387	49,527,680
Total	526,078	336,689,920

GRAND AGGREGATE.

Total in Free States	454,340	290,777,600
Total in Slave States	936,368	599,275,520
Total in States	1,390,708	890,053,120
Total, old territory	1,335,898	854,974,720
Total, new territory	526,078	336,689,920
Total	3.252,684	2,081,717,760
Length of the Atlantic Coast—		
To the mouth of St. Mary's River	1,450	....
From mouth of St. Mary's River to Cape of Florida	450	....
Gulf Coast to mouth of the Sabine River	1,200	....
Total	3,100	

Those States where the public lands are situated, are generally exclusive of lakes, ponds, &c, Marshes are estimated.

The territories include such waters as are interior.

DIMINISHING RATIO OF POPULATION AND CONSEQUENTLY OF VOTES.

So far, too, as political power, founded on numbers, is concerned, Massachusetts is shrinking hardly less rapidly than in the relative compass of her borders. Out of two hundred and thirty representatives in the national Congress, she has but ten; and the next census, now so soon to be taken, will seriously reduce this meagre proportion. In the first Congress, she had eight out of sixty-five; or one in eight, (and a fraction,) instead of one in twenty-three, as at present, with waning prospects for the future. In the presidential election of the current year, she gives but twelve out of two hundred and ninety votes. In choosing electors, therefore, in declaring war and in making peace, and in all the mighty interests, political and moral, that depend upon war and peace; in the deep pecuniary stake which every commercial and manufacturing people have in questions of foreign commerce and domestic currency; and in all civil, military, and diplomatic appointments, which require the concurrence of the Senate, Massachusetts is at the mercy of her sisters; and if those sisters become imperious and aggressive, as some of them give significant tokens of becoming, she must succumb and suffer, like the abused Cordelia amid the haughty Gonerils and Regans of the family.

This picture is no fancy-sketch. It is drawn from the original, without the exaggeration of a color or a line. We are confronted by these stern realities, these incontrovertible facts; and no illusions of a poetic temperament, no complacent retrospection over periods of past renown, can avert or delay our impending fate. Like the foolish bird which supposes it can avoid danger by hiding its head from its pursuer, we may hide our eyes and avert our thoughts from all contemplation of the fortunes that await us, but those fortunes will nevertheless overtake us, with a speed that we cannot escape from, and a resistlessness that we cannot overcome.

HOW, THEN, MAY MASSACHUSETTS RETAIN HER RELATIVE IMPORTANCE?

What, then, shall save our native and beloved State from vanishing quite away; — from being unknown in the counsels of the nation, and lost to the history of the world? In our domestic legislation, and in all our social relationships, what policy shall prevail, and by what spirit shall we be animated, in order to avert so deplorable a fate? Has not every patriot, every worthy son of a Pilgrim sire, an answer at hand? If Massachusetts can no longer challenge respect on account of her numbers, she must challenge it on account of her character. If she is no longer visible by her magnitude, she must become so by her light. She must be like Hesper, "fairest of all the train of night," and compensate for the diminutiveness of her size by the intenseness of her brilliancy.

Let us reflect, then, in the first place, that Massachusetts has an absolute, as well as a relative, existence. She exists for her present people and for their posterity, as well as for the Union at large. Though relatively declining, when compared with the whole country, yet there is an actual and constant increase in her numbers. Within her narrow borders, she will soon have a million of people; and what finite power can adequately comprehend the joys and sorrows, the hopes and fears, the honor or shame, of a million of human beings belonging to the same generation; or sum up the fearful aggregate of happiness or misery for themselves and their descendants.

INFLUENCE NOT MEASURED ONLY BY EXTENT OF TERRITORY OR OF POPULATION.

Let us thank Heaven, too, that there are other standards of greatness besides vastness of territory; and other forms of wealth besides mineral deposits or agricultural exuberance. Though every hill were a Potosi, though every valley, like that of the Nile, were rank with fatness, yet might a nation be poor in the most desperate sense; — benighted in the darkness of barbarism, and judgment-stricken of Heaven for its sins. A State has local boundaries which it cannot rightfully transcend; but the realm of intelligence, the sphere of charity, the moral domain in which the soul can expand and expatiate, are illimitable, — vast and boundless as the omnipresence of the Being that created them. Worldly treasure is of that nature that rust may corrupt, or the moth destroy, or thieves steal; but, even upon the earth, there are mental treasures which are unapproachable by fraud, impregnable to violence, and whose value does not perish, but is redoubled with the using.

THE GREATNESS OF STATES NOT MEASURED BY MILES OR NUMBERS.

A State, then, is not necessarily fated to insignificance because its dimensions are narrow, nor doomed to obscurity and powerlessness because its numbers are few. Athens was small; yet, low as were her moral aims, she lighted up the whole earth as a lamp lights up a temple. Judea was small; but her prophets and her teachers were, and will continue to be, the guides of the world. The narrow strip of half-cultivable land, that lies between her eastern and western boundaries, is not Massachusetts; but her noble and incorruptible men, her pure and exalted women, the children in all her schools, whose daily lessons are the preludes and rehearsals of the great duties of life, and the prophecies of future eminence,— THESE ARE THE STATE!

EDUCATION THE POTENT MEANS OF DEVELOPING AND DIFFERENTIATING THE CAPACITIES OF MEN.

Under the Providence of God, our means of education are the grand machinery by which the "raw material" of human nature can be worked up into inventors and discoverers, into skilled artisans and scientific farmers, into scholars and jurists, into the founders of benevolent institutions, and the great expounders of ethical and theological science. By means of early education, those embryos of talent may be quickened, which will solve the difficult problems of political and economical law; and by them, too, the genius may be kindled which will blaze forth in the Poets of Humanity. Our schools, far more than they have done, may supply the Presidents and Professors of Colleges, and Superintendents of Public Instruction, all over the land; and send, not only into our sister States, but across the Atlantic, the men of practical science, to superintend the construction of the great works of art. Here, too, may those judicial powers be developed and invigorated, which will make legal principles so clear and convincing as to prevent appeals to force; and, should the clouds of war ever lower over our country, some hero may be found,— the nursling of our schools, and ready to become the leader of our armies,— that best of all heroes, who will secure the glories of a peace, unstained by the magnificent murders of the battle-field.

PRESENT ACTION DETERMINES FUTURE DEVELOPMENT.

The fortunes of a State depend upon antecedent causes, working with greater or less energy, through longer or shorter periods of time. By virtue of this universal law, the future condition of the people of Massachusetts will be modified, and, to a great extent, determined, by the force of causes now put in operation. Enlightened reason discerns the connection between cause and effect; it measures the efficiency of causes; and thus, to a great extent, it is able to adopt and adapt means to the accomplishment of designed ends. Feeble and erring, as is the reason of man, yet, in this attribute, far more nearly than in any other, does he preserve the Divine image in which he was originally formed. Supposing matter to have been first created by the fiat of the Almighty, a substantial and beautiful analogy may be traced between the methods pursued by the Creator and the creature, in the formation of the works of their hands. When the fulness of time for creating the Parent of the human race had arrived, we must suppose the idea or archetype of a *Man* to have existed in the Divine Mind, as really as "the dust of the earth" from which he was to be formed existed in His hand; and that, in obedience to the Sovereign Volition, all the elements of which Man is composed,— the oxygen, the hydrogen, the nitrogen, the carbon, and all the rest,— were brought together, and were arranged into his hundreds of bones and of muscles, his thousands of blood-vessels, and his millions of nerves; — in fine, into his limbs and into the manifold apparatus of his senses; into that wonderful organ, the heart; and, if anything can surpass the heart as a miracle of creative power, into that still more wonderful organ, the brain: — we must suppose, I say, that the elements for the formation of this work were assigned, each to its appropriate place, until God saw the noble and majestic structure of the human form before him, perfect in all its parts.

MAN MUST CONCEIVE THE IDEAL BEFORE HE CAN CREATE THE ACTUAL.

At a vast distance, but still in humble imitation of the Divine processes, does man proceed for the completion of every work of his hands. The Architect, for instance, through the medium of his senses, acquires a knowledge of all the various properties of all the substances which enter into the construction of an edifice. By his reason, he discovers the special uses and capabilities of all the materials to be employed. Then, in the solitude of his closet, or in the darkness of midnight, he revives, in his mind, the images of all the substances and ingredients necessary to his work; he measures and arranges, and combines *the ideas* of them; he applies to them the architectural laws of fitness, proportion, and strength, until, at last, the grand conception of the edifice,— whether sacred temple or human dwelling,— rises in his mind, complete from foundation to turret. *He brings together and adjusts the ideas of things, just as an omnipotent arm would bring together and adjust the ponderous things themselves.* After this, he orders the materials to be collected from their respective localities,— it may be from different quarters of the globe,— the wood from the forest, the marble from the quarry, the iron from the mine, the bricks from the clay-pit, the glass, the furniture, the tapestry, and so forth, each from its place, until that ideal image, which had before risen up in the silent recesses of his mind, now stands forth in full and majestic proportions, embodied in visible and enduring substance, and supplying, for centuries to come, a fit place for the dwelling of man, or for the worship of God. So, when the Garden of Eden was planted, and when every tree that is pleasant to the sight and good for use, was made to grow out of the ground, we must suppose that the Creator, proceeding upon the perfect ideas already in His mind, mingled together, in due proportion, those few chemical elements, which, in their various combinations, make up the almost infinite varieties of the vegetable world, until all of nourishment, and perfume, and beauty, which enters into our imagination of Paradise, clustered, and glowed, and bloomed around, and filled the air with its sweets. In like manner, the gardener, who wishes to bring together, within a narrow compass, specimens of the various plants and flowers, that grow between the equator and the arctic, first acquires a knowledge of whatever he would cultivate; he classifies them, and arranges all the classes in his mind, according to their respective natures; he encloses and prepares his grounds; and then he gathers together seed, and plant, and vine, indigenous and exotic; — on some he pours a double portion of the sun; some he removes into the shade; others he buries in darkness to imitate the growth of caverns; and others still, he surrounds with ice, to reproduce the dwarfish vegetation of the frigid zone; for some, he prepares a soil dry as an Arabian desert, and, for others, he makes an artificial pool; — until that which, at first, was only a bodiless creation of fancy in the mind of the designer, becomes a utility and an embellishment, sustaining the life, and ministering to the luxury of men.

THE STATESMEN AND THE LAW-MAKERS RESPONSIBLE FOR THE DESTINIES OF THE STATE.

Now, it is the especial province and function of the statesman and the law giver,— of all those, indeed, whose influence moulds or modifies public opinion,— to study out the eternal principles which conduce to the strength, wisdom, and righteousness of a community; — to search for these principles as for hidden riches; to strive for them, as one would strive for his life; — and then to form public institutions in accordance with them. And he is not worthy to be called a statesman, he is not worthy to be a law giver or leader among men, who, either through the weakness of his head, or the selfishness of his heart, is incapable of marshalling, in his mind, the great ideas of knowledge, justice, temperance, and obedience to the laws of God,— on which foundation alone, the structure of human welfare can be erected;— who is not capable of organizing these ideas into a system, and then of putting that system into operation, as a mechanic does a machine. This only is true statesmanship.

The chief men in society, whether they derive their preëminence from birth, or wealth, or office, or superiority in natural endowments, are mainly responsible for the institutions they leave behind them: because it is in their power to form or conform those institutions, according to their own ideas of excellence. The leading spirits of one of the great nations of antiquity had no higher idea of female excellence than that of personal beauty and the attractions of voluptuousness; and hence their brightest and most boasted female ornament was a courtezan. The leading spirits of that other ancient nation, whose perpetual and disgraceful boast it was, that it had conquered the whole world, were proud to trace back their ferocious lineage, through patrician and regal blood, to the wolf that suckled their founder; — a tradition, which, whether fact or fiction, is full of allegoric truth. The founders of communities, contemporaneous with our own, and now component parts of this republic, filled their veins, at their birth, with the cancerous blood of Slavery; which has now spread itself over and corrupted their whole organism; and yet the tormented sufferer contends for his disease as for his life,—fights for the devil that rends him; because, as he affirms, the exorcism of the evil spirit will be death to himself. For centuries, a leading feature in the policy of Great Britain towards Ireland, was the utter abolition of all education which did not conform to the government standard of theology, and was not administered by teachers of its own choosing. None but a *Protestant* was allowed to keep a school. From 1709 to 1782, any Roman Catholic, who should presume to be a schoolmaster, or assistant to a schoolmaster, *or even a tutor in a private family*, was to be transported; and if the party returned, then he was to be adjudged guilty of high treason, and to be hung, drawn, and quartered! A great portion of the present agony of starving, diseased, distracted Ireland, is directly referable to the ignorance which has resulted from those imperial interdicts against knowledge. No other acts of British oppression have been so fatal in driving sanity out of the head, and kindness out of the heart, of that maddened country, as the cruel laws by which every child in Ireland was prohibited from nourishing himself with a grain of knowledge, unless he would swallow with it a scruple of theology. These are a few specimens taken from the great storehouse of history, showing how those who enact laws and organize public institutions, pre-determine the fate of the masses. And are not all those, who control legislation and lead public opinion among ourselves, adjured, by these admonitions of history, as well as by the voice of conscience, and the precepts of Christianity, to form a model idea of a healthy, industrious, frugal, temperate, wise, Christian Commonwealth, and then to exert all their faculties, and all their activiites, in turning this idea into a living reality?

THE COMMON SCHOOL A MOST EFFECTIVE INSTRUMENT OF CIVILIZATION.

Without undervaluing any other human agency, it may be safely affirmed that the common school, improved and energized, as it can easily be, may become the most effective and benignant of all the forces of civilization. Two reasons sustain this position. In thefirst place, there is a universality in its operation, which can be affirmed of no other institution whatever. If administered in the spirit of justice and conciliation, all the rising generation may be brought within the circle of its reformatory and elevating influences. And, in the second place, the materials upon which it operates are so pliant and ductile as to be susceptible of assuming a greater variety of forms than any other earthly work of the Creator. The inflexibility and ruggedness of the oak, when compared with the lithe sapling or the tender germ, are but feeble emblems to typify the docility of childhood, when contrasted with the obduracy and intractableness of man. It is these inherent advantages of the Common School, which, in our own State, have produced results so striking, from a system so imperfect, and an administration so feeble. In teaching the blind, and the deaf and dumb, in kindling the latent spark of intelligence that lurks in an idiot's mind, and in the more holy work of reforming abandoned and outcast children, education has proved what it can do, by glorious experiments. These wonders, it has done in its infancy, and with the lights of a limited experience; but, when its faculties shall be fully develolped, when it shall be trained to wield its mighty energies for the protection of society against the giant vices which now invade and torment it;—against intemperance, avarice, war, slavery, bigotry, the woes of want and the wickedness of waste,—then, there will not be a height to which these enemies of the race can escape which it will not scale, nor a Titan among them all whom it will not slay.

I proceed, then, in endeavoring to show how the true business of the school room connects itself, and becomes identical, with the great interests of society. The former is the infant, immature state of those interests; the latter, their developed adult state. As "the child is father to the man," so may the training of the schoolroom expand into the institutions and fortunes of the State.

Here follows an earnest and eloquent plea for "Physical education," which is considered in all its relations, as of interest to the individual, and as of the greatest importance to the community in its bearing on the sanitary regulations of cities, and the hygienic construction of all buildings.

To this, succeeds the following treatise on the relations of the education of the people to questions of political economy; a treatise worthy the thoughtful consideration of all in these latter days, when these questions have, for society, a lurid significance wholly unknown to the generation amid which Mr. Mann was writing.

Based on the arguments here adduced from the results attained by the intelligent middle classes of England, Holland, and Scotland, what picture of future progress could be called extravagant in connection with a people who, as children, had received, in addition to the former common-school education, direct training in the arts of industry?

"INTELLECTUAL EDUCATION AS A MEANS OF REMOVING POVERTY, AND SECURING ABUNDANCE."

Another cardinal object which the government of Massachusetts, and all the influential men in the State should propose to themselves is the physical well-being of all the people,—the sufficiency, comfort, competence, of every individual, in regard to food, raiment, and shelter. And these necessaries and conveniences of life should be obtained by each individual for himself, or by each family for themselves, rather than accepted from the hand of charity, or extorted by poor-laws. It is not averred that this most desirable result can, in all instances, be obtained; but it is, nevertheless, the end to be aimed at. True statesmanship and true political economy, not less than true philanthropy, present this perfect theory as the goal, to be more and more closely approximated by our imperfect practice. The desire to achieve such a result cannot be regarded as an unreasonable ambition; for, though all mankind were well-fed, well-clothed, and well-housed, they might still be but half-civilized.

POVERTY A NEEDLESS EVIL!.

Poverty is a public as well as a private evil. There is no physical law necessitating its existence. The earth contains abundant resources for ten times,—doubtless for twenty times,—its present inhabitants. Cold, hunger, and nakedness, are not, like death, an inevitable lot. There are many single States in this Union which could supply an abundance of edible products for the inhabitants of the thirty States that compose it. There are single States capable of raising a sufficient quantity of cotton to clothe the whole nation; and there are other States having sufficient factories and machinery to manufacture it. The coal fields of Pennsylvania are sufficiently abundant to keep every house in the land, at the temperature of 65°, for centuries to come. Were there to be a competition, on the one hand to supply wool for every conceivable fabric; and, on the other hand, to wear out these fabrics as fast as possible, the single State of New York would beat the whole country. There is, indeed, no assignable limit to the capacities of the earth for producing whatever is necessary for the sustenance, comfort, and improvement of the race. Indigence, therefore, and the miseries and degradations incident to indigence, seem to be no part of the eternal ordinances of Heaven. The bounty of God is not brought into question, or suspicion, by its existence; for man who suffers it might have avoided it. Even the wealth which the world now has on hand is more than sufficient to supply all the rational wants of every individual in it. Privations and sufferings exist, not from the smallness of its sum, but from the inequality of its distribution. Poverty is set over against profusion. In some, all healthy appetite is cloyed and sickened by repletion; while in others, the stomach seems to be a supernumerary organ in the system; or, like the human eye or human lungs before birth, is waiting to be transferred to some other region, where its functions may come into use. One gorgeous palace absorbs all the labor and expense that might have made a thousand hovels comfortable. That one man may ride in carriages of oriental luxury, hundreds of other men are turned into beasts of burden. To supply a superfluous wardrobe for the gratification of one man's pride, a thousand women and children shiver with cold; and for every flash of the diamonds that royalty wears, there is a tear of distress in the poor man's dwelling. Not one Lazarus, but a hundred, sit at the gate of Dives. Tantalus if no fiction. The ancient one might have been fabulous; but the modern ones are terrible realities. Millions are perishing in the midst of superfluities.

THE ANTAGONISTIC THEORIES OF EUROPE AND OF MASSACHUSETTS CONTRASTED.

According to the European theory, men are divided into classes,—some to toil and earn, others to seize and enjoy. According to the Massachusetts theory, all are to have an equal chance for earning, and equal security in the enjoyment of what they earn. The latter tends to equality of condition; the former to the grossest inequalities. Tried by any Christian standard of morals, or even by any of the better sort of heathen standards, can any one hesitate, for a moment, in declaring which of the two will produce the greater amount of human welfare; and which, therefore, is the more conformable to the Divine will? The European theory is blind to what constitutes the highest glory, as well as the highest duty, of a State. Its advocates and admirers are forgetful of that which should be their highest ambition, and proud of that which constitutes their shame. How can any one, possessed of the attributes of humanity, look with satisfaction upon the splendid treasures, the golden regalia, deposited in the Tower of London, or in Windsor Palace, each "an India in itself," while thousands around are dying of starvation; or have been made criminals by the combined forces of temptation and neglect? The present condition of Ireland cancels all the glories of the British crown. The brilliant conception which symbolizes the nationality of Great Britain as a superb temple, whose massive and grand proportions are upheld and adorned by the four hundred and thirty Corinthian columns of the aristocracy, is turned into a loathing and a scorn, when we behold the five millions of paupers that cower and shiver at its base. The galleries and fountains of Versailles, the Louvre of Paris, her Notre Dame, and her Madeleine, though multiplied by thousands in number and in brilliancy, would be no atonement for the hundred thousand Parisian *ouvriers*, without bread and without work. The galleries of painting and of sculpture, at Rome, at Munich, or at Dresden, which body forth the divinest ideals ever executed or ever conceived, are but an abomination in the sight of Heaven and of all good men, while actual, living beings,— beings that have hearts to palpitate, and nerves to agonize, and affections to be crushed or corrupted,— are experimenting, all around them, upon the capacities of human nature for suffering and for sin. Where standards like these exist, and are upheld by council and by court, by fashion and by law, *Christianity is yet to be discovered.* At least, it is yet to be applied in practice to the social condition of men.

Our ambition, as a State, should trace itself to a different origin, and propose itself a different object. Its flame should be lighted at the skies. Its radiance and its warmth should reach the darkest and the coldest abodes of men. It should seek the solution of such problems as these: To what extent can competence displace pauperism? How nearly can we free ourselves from the low-minded and the vicious; not by their expatriation, but by their elevation? To what extent can the resources and powers of nature be converted into human welfare, the peaceful arts of life be advanced, and the vast treasures of human talent and genius be developed? How much of suffering, in all its forms, can be relieved; or, what is better than relief, how much can be prevented? Cannot the classes of crimes be lessened, and the number of criminals, in each class, be diminished? Our exemplars, both for public and for private imitation, should be the parables of the lost sheep and of the lost piece of silver. When we have spread competence through all the abodes of poverty; when we have substituted knowledge for ignorance, in the minds of the whole people; when we have reformed the vicious and reclaimed the criminal; then may we invite all neighboring nations to behold the spectacle, and say to them, in the conscious elation of virtue, "Rejoice with me," for I have found that which was lost. Until that day shall arrive our duties will not be wholly fulfilled, and our ambition will have new honors to win.

However well founded or exaggerated the fears of Mr. Mann, as expressed in the following extracts, as to the tendency in Massachusetts to the concentration of wealth in a class of rich capitalists, may have been, forty years ago; it cannot be denied that, to-day, the existence all over the United States of classes of people possessing great private fortunes, is one of the most striking facts of this phenomenal era and country. The dangers inherent to such social inequalities are not by him too strongly portrayed. The existence in this country of Russian Nihilists and Chicago Anarchists re-echo and emphasize his warnings.

Universal education, that on the one hand, shall fit men and women to be skilled and artistic workers, and, on the other, shall instruct all citizens in a knowledge and appreciation of the underlying principles which alone make Republics possible, offers the only security for the continuance of our form of Government, and for the retention of, at least, the present prosperity of Americans.

A prosperity of working people unequalled elsewhere; but which is constantly put in jeopardy by the often misguided, misdirected, if not illegal acts of strikers in obedience to irresponsible leaders, who direct strikes in revolt against the real, or supposed, injustice of individual or incorporated capatilist employers; or, by the enactments of ignorant, or unscrupulous legislators.

Of the situation at the time of his writing Mr. Mann says:

> But is it not true, that Massachusetts in some respects instead of adhering more and more closely to her own theory, is becoming emulous of the baneful examples of Europe? The distance between the two extremes of society is lengthening, instead of being abridged. With every generation, fortunes increase, on the one hand, and some new privation is added to poverty, on the other. We are verging towards those extremes of opulence and of penury, each of which unhumanizes the human mind. A perpetual struggle for the bare necessaries of life, without the ability to obtain them, makes men wolfish. Avarice, on the other hand, sees, in all the victims of misery around it — not objects for pity and succor,— but only crude materials to be worked up into more money.

Dangers to a Republic arising from Large Private Fortunes.

> I suppose it to be the universal sentiment of all those who mingle any ingredient of benevolence with their notions on Political Economy, that vast and overshadowing private fortunes are among the greatest dangers to which the happiness of the people in a republic can be subjected. Such fortunes would create a feudalizm of a new kind; but one more oppressive and unrelenting than that of the Middle Ages. The feudal lords in England, and on the continent, never held their retainers in a more abject condition of servitude, than the great majority of foreign manufacturers and capitalists hold their operatives and laborers at the present day. The means employed are different, but the similarity in results is striking. What force did then, money does now. The villein of the Middle Ages had no spot of earth on which he could live, unless one were granted to him by his lord. The operative or laborer of the present day has no employment, and therefore no bread, unless the capitalist will accept his services. The vassal had no shelter but such as his master provided for him. Not one in five thousand of English operatives, or farm laborers, is able to build or own even a hovel; and therefore they must accept such shelter as Capital offers them. The baron prescribed his own terms to his retainers; those terms were peremptory, and the serf must submit or perish. The British manufacturer or farmer prescribes the rate of wages he will give to his work-people; he reduces these wages under whatever pretext he pleases; and they too have no alternative but submission or starvation. In some respects, indeed, the condition of the modern dependent is more forlorn than that of the corresponding serf class in former times. Some attributes of the patriarchal relation did spring up between the lord and his lieges, to soften the harsh relations subsisting between them. Hence came some oversight of the condition of children, some relief in sickness, some protection and support in the decrepitude of age. But only in instances comparatively few, have kindly offices smoothed the rugged relation between British Capital and British Labor. The children of the work-people are abandoned to their fate; and, notwithstanding the privations they suffer, and the dangers they threaten, no power in the realm has yet been able to secure them an education; and when the adult laborer is prostrated by sickness, or eventually worn out by toil and age, the poor-house, which has all along been his destination, becomes his destiny.
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> Now two or three things will doubtless be admitted to be true, beyond all controversy, in regard to Massachusetts. By its industrial condition, and its business operations, it is exposed, far beyond any other State in the Union, to the fatal extremes of over-grown wealth and desperate poverty. Its population is far more dense than that of any other State. It is four or five times more dense than the average of all the other States, taken together; and density of population has always been one of the proximate causes of social inequality. According to population and territorial extent, there is far more capital in Massachusetts,— capital which is movable, and instantaneously available,— than in any other State in the Union; and probably both these qualifications respecting population and territory could be omitted without endangering the truth of the assertion. It has been recently stated, in a very respectable public journal, on the authority of a writer conversant with the subject, that, from the last of June, 1846, to the 1st of August, 1848, the amount of money invested, by the citizens of Massachusetts, "in manufacturing cities, railroads, and other improvements," is "fifty-seven millions of dollars, of which more than fifty has been paid in and expended." The dividends to be received by citizens of Massachusetts from June, 1848, to April, 1849, are estimated, by the same writer, at ten millions, and the annual increase of capital at "little short of twenty-two millions." If this be so, are we not in danger of naturalizing and domesticating among ourselves those hideous evils which are always engendered between Capital and Labor, when all the capital is in the hands of one class, and all the labor is thrown upon another?

UNIVERSAL EDUCATION THE ONLY SAFEGUARD.

Now, surely, nothing but Universal Education can counterwork this tendency to the domination of capital and the servility of labor. If one class possesses all the wealth and the education, while the residue of society is ignorant and poor, it matters not by what name the relation between them may be called; the latter, in fact and in truth, will be the servile dependants and subjects of the former. But if education be equably diffused, it will draw property after it, by the strongest of all attractions; for such a thing never did happen, and never can happen, as that an intelligent and practical body of men should be permanently poor. Property and labor, in different classes, are essentially antagonistic; but property and labor, in the same class, are essentially fraternal. The people of Massachusetts have, in some degree, appreciated the truth, that the unexampled prosperity of the State,— its comfort, its competence, its general intelligence and virtue,—is attributable to the education, more or less perfect, which all its people have received; but are they sensible of a fact equally important?—namely, that it is to this same education that two-thirds of the people are indebted for not being, to-day, the vassals of as severe a tyranny, in the form of capital, as the lower classes of Europe are bound to in the form of brute force.

EDUCATION A GREAT EQUALIZER.

Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men—the balance-wheel of the social machinery. I do not here mean that it so elevates the moral nature as to make men disdain and abhor the oppression of their fellow-men. This idea pertains to another of its attributes. But I mean that it gives each man the independence and the means, by which he can resist the selfishness of other men. It does better than to disarm the poor of their hostility towards the rich; it prevents being poor. Agrarianism is the revenge of poverty against wealth. The wanton destruction of the property of others,— the burning of hay-ricks and corn-ricks, the demolition of machinery, because it supersedes hand-labor, the sprinkling of vitriol on rich dresses,— is only agrarianism run mad. Education prevents both the revenge and the madness. On the other hand, a fellow-feeling for one's class or caste is the common instinct of hearts not wholly sunk in selfish regards for person, or for family. The spread of education, by enlarging the cultivated class or caste, will open a wider area over which the social feelings will expand; and, if this education should be universal and complete, it would do more than all things else to obliterate factitious distinction in society.

MISTAKEN THEORIES AS TO CAUSES OF, AND REMEDIES FOR, POVERTY.

The main ideas set forth in the creeds of some political reformers, or revolutionizers, is, that some people are poor *because* others are rich. This idea supposes a fixed amount of property in the community, which, by fraud or force, or arbitrary law, is unequally divided among men; and the problem presented for solution is, how to transfer a portion of this property from those who are supposed to have too much, to those who feel and know that they have too little. At this point, both their theory and their expectation of reform stop. But the beneficent power of education would not be exhausted, even though it should peaceably abolish all the miseries that spring from the coëxistence, side by side, of enormous wealth and squalid want. It has a higher function.

EDUCATION CREATES WEALTH,—IS POTENTIAL WEALTH.

Beyond the power of diffusing old wealth, it has the prerogative of creating new. It is a thousand times more lucrative than fraud; and adds a thousand fold more to a nation's resources than the most successful conquests. Knaves and robbers can obtain only what was before possessed by others. But education creates or develops new treasures,—treasures not before possessed or dreamed of by any one.

Had mankind been endowed with only the instincts and faculties of the brute creation, there are hundreds of the irrational tribes, to which they would have been inferior, and of which they would have been the prey. Did they, with other animals, roam a common forest, how many of their fellow-tenants of the wood would overcome them by superior force, or outstrip them by greater fleetness, or circumvent them by a sharper cunning! There are but few of the irrational tribes whose bodies are not better provided with the means of defence or attack than is the body of a man. The claws and canine teeth of the lion, and of the whole tiger family, the beak and talons of the eagle and the vulture, the speed of the deer, and of other timid races, are means of assault or of escape far superior to any we possess; and all the power which we have, like so many of the reptile and insect classes, of secreting a deadly venom, either for protection or for aggression, has relation to moral venom, and not to physical.

In a few lines, nowhere surpassed in philosophic strength and beauty, Pope groups together the remarkable qualities of several different races of animals,—the strength of one class, the genial covering of another, the fleetness of a third. He brings vividly, to our recollection, the lynx's vision of excelling keenness; the sagacity of the hound, that reads a name or a sign in the last vanishing odor of a foot-print; the exquisite fineness of the spider's touch; and that chemical nicety by which the bee discriminates between honey and poison in the same flower-cup. He then closes with an interrogatory, which has human reason both for its subjects and its objects:—

"The powers of all, subdued by thee alone,
Is not thy Reason all these powers in one?"

When Pope, now a little more than a century ago, mingled these beauties with his didactic strains, he had no conception, the world, at that time, had no conception, of other powers and properties, infinitely more energetic and more exhaustless than all which the animal races possess, to which the reason of man is an equivalent. It was not then known, that God had endued the earth and the elements with energies and activities as much superior to those which animals or men possess, as the bulk and frame of the earth itself exceeds their diminutive proportions. It was not then known that the earth is a great reservoir of powers, and that any man is free to use any quantity of them, if he will but possess himself of the Key of Knowledge,—the only key, but the infallible one, by which to unlock their gates. At that time, if a philosopher wished to operate a mechanical toy, he could lift or pump a few gallons of water for a moving power; but it was not understood that nature, by the processes of evaporation and condensation, is constantly lifting up into the sky, and pouring back upon the earth, all the mass of waters that flow in all the rivers of the world; and that, in order to perform the work of the world, the weight of all these waters might be used again and again, in each of their perpetual circuits.* The power-press and the power-loom; the steam-boat and the locomotive; the paper-machine and the telegraph, were not then known. All these instruments of human comfort and aggrandizement, and others almost innumerable, similar to them, are operated by the energies and the velocities of Nature; and had Pope grouped together all the splendid profusion and prodigality of her powers, he might still have appealed to man, and said,

"*Is not thy Reason all these powers in one?*"

To the weight of waters, the velocity of winds, the expansive force of heat, and other kindred agencies, any man may go, and he may draw from them as much as he pleases, without money and without price; or rather, I should say, any educated man may go, for nature flouts and scorns, and seems to abhor an ignorant man. She drowns him, and consumes him, and tears him in pieces, if he but ventures to profane, with his touch, her divinely wrought machinery.

HOW EDUCATION CREATES WEALTH.

Now, these powers of nature, by being enlisted in the service of man, add to the wealth of the world;—unlike robbery, or slavery, or agrarianism, which aim only at the appropriation, by one man, or one class, of the wealth belonging to another man or class. One man, with a Foudrinier, will make more paper in a twelvemonth than all Egypt could have made in a hundred years, during the reign of the Ptolemies. One man, with a power-press, will print books faster than a million of scribes could copy them, before the invention of printing. One man, with an iron-foundry, will make more utensils or machinery than Tubal-Cain could have made, had he worked diligently till this time.† And so in all the departments of mechanical labor; in the whole circle of the useful arts. These powers of nature are able to give, to all the inhabitants of the earth, not merely shelter, covering, and food, but all the means of refinement, embellishment, and mental improvement. In the most strict and literal sense, they are bounties which God gives for proficiency in knowledge.

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*The waters of the Blackstone river, which flows partly in Massachusetts, and partly in Rhode Island, are used for driving mills, twenty-five times over, in a distance of less than forty miles.

†In 1740, the whole amount of iron made in England and Wales, was 17,000 tons; in 1840, it was more than 1,000,000 tons, notwithstanding all that had been manufactured and accumulated in the intervening century. What would a Jewish or a Roman artificer have said to an annual product of a million tons of iron?

WHY INDUSTRIAL PROGRESS WAS SO LONG DELAYED.

The above ideas are beginning to be pretty well understood by all men of respectable intelligence. I have adverted to them, not so much on their own account, as by way of introduction, or preface to two or three considerations, which certainly are not understood, or not appreciated, as they deserve to be.

It is a remarkable fact, that human progress, even in regard to the worldly interests of the race, did not begin with those improvements which are most closely allied to material prosperity. One would have supposed, beforehand, that improvements would commence with the near, rather than with the remote. Yet mankind had made great advances in astronomy, in geometry, and other mathematical sciences; in the writing of history, in oratory, and in poetry; it is supposed, by many, to have reached the highest point of yet attained perfection in painting and in sculpture, and in those kinds of architecture which may be called regal or religious, centuries before the great mechanical discoveries and inventions which now bless the world, were brought to light. And the question has often forced itself upon reflecting minds, why there was this preposterousness, this inversion of what would appear to be the natural order of progress. Why was it, for instance, that men should have learned the courses of the stars, and the revolutions of the planets, before they found out how to make a good wagon wheel? Why was it, that they built the Parthenon and the Colosseum, before they knew how to construct a comfortable, healthful dwelling-house? Why did they construct the Roman aqueducts before they constructed a saw-mill? Or, why did they achieve the noblest models, in eloquence, in poetry, and in the drama before they invented movable types?

A STRIKING ARGUMENT IN FAVOR OF INDUSTRIAL AND TECHNICAL EDUCATION.

I think we have now arrived at a point where we can unriddle this enigma. *The labor of the world has been performed by ignorant men;*— by classes doomed to ignorance, from sire to son;— by the bondmen and bond-women of the Jews; by the helots of Sparta; by the captives who passed under the Roman yoke; and by the villeins, and serfs, and slaves, of more modern times. The masters,— the aristocratic or patrician orders,— not only disdained labor for themselves and their children, which was one fatal mistake, but they supposed that knowledge was of no use to a laborer, which was a mistake still more fatal. Hence, ignorance, for almost six thousand years, has gone on plying its animal muscles, and dropping its bloody sweat, and never discovered any way, nor dreamed that there was any way, by which it might accomplish many times more work, with many times less labor. And yet, nothing is more true, than that an ignorant man will toil all his life long, moving to and fro, within an inch of some great discovery, and will never see it. All the elements of a great discovery may fall into his hands, or be thrust into his face, but his eyes will be too blind to behold it. If he is a slave, what motive has he to behold it? Its greater profitableness will not redound to his benefit, for another stands ready to seize all the gain. Its abridgement of labor will not conduce to his ease, for other toils await him. But the moment an intelligent man applies himself to labor, and labors for his own benefit, or for that of his family, he begins to inquire whether the same task cannot be performed with a less expenditure of strength, or greater task with an equal expenditure. He makes his wits save his bones. He finds it to be easier to think than to work, nay, that it is easier both to think and work, than to work without thinking. He foresees a prize as the reward of successful effort, and this stimulates his brain to deep contrivance, as well as his arms to rapid motion. Taking, for illustration, the result of an experiment which has been actually made, let us suppose this intelligent laborer to be employed in moving blocks of squared granite, each weighing 1080 pounds. To move such a block along the floor of a roughly chiselled quarry, requires a force equal to 758 pounds. An ignorant man, therefore, must employ and pay several assistants, or he can never move such a block an inch. But to draw the same block over a floor of planks, will require a force of only 652 pounds. The expense of one assistant, therefore, might be dispensed with. Placed on a platform of wood, and drawn over the same floor, a draft of 606 pounds would be sufficient. By soaping the two surfaces of the wood, the requisite force would be reduced to 182 pounds. Placed on rollers, three inches in diameter, a force equal to 34 pounds would be sufficient. Substituting a wooden for a stone floor, and the requisite force is 28 pounds. With the same rollers, on a wooden platform, 22 pounds only would be required. And, now, by the invention and use of locomotives and railroads, a traction or draft of between *three* and *four* pounds is found to be sufficient to move a body weighing 1080 pounds. Thus, the amount of force necessary to remove the body is reduced about two hundred times. Now, take away from these steps the single element of intelligence, and each improvement would have been impossible. The ignorant man would never have discovered how nearly synonymous are freight and friction.

If a savage will learn how to swim, he can fasten a dozen pounds' weight to his back, and transport it across a narrow river, or other body of water of moderate width. If he will invent an axe, or other instrument, by which to cut down a tree, he can use the tree for a float and one of its limbs for a paddle, and can thus transport many times the former weight, many times the former distance. Hollowing out his log, he will increase, what may be called, its tonnage,— or, rather, its *poundage*,— and, by sharpening its ends, it will cleave the water both more easily and more swiftly. Fastening several trees together, he makes a raft, and thus increases the buoyant power of his embryo water-craft. Turning up the ends of small poles, or using knees of timber instead of straight pieces, and grooving them together, or filling up the interstices between them, in some other way, so as to make them water-tight, he brings his rude raft literally into *ship-shape*. Improving upon hull below and rigging above, he makes a proud merchantman, to be wafted by the winds from continent to continent. But, even this does not content the adventurous naval architect. He frames iron arms for his ship; and, for oars, affixes iron wheels, capable of swift revolution, and stronger than the strong sea. Into iron-walled cavities in her bosom, he puts iron organs of massive structure and strength, and of cohesion insoluble by fire. Within these he kindles a small volcano; and then, like a sentient and rational existence, this wonderful creation of his hands cleaves oceans, breasts tides, defies tempests, and bears its living and jubilant freight around the globe. Now, take away intelligence from the ship-builder, and the steam-ship,— that miracle of human art — falls back into a floating log; the log is itself lost; and the savage swimmer, bearing his dozen pounds on his back, alone remains.

A PLEA FOR THE EDUCATION OF WORKERS.

And so it is, not in one department only, but in the whole circle of human labor. The annihilation of the sun would no more certainly be followed by darkness, than the extinction of human intelligence would plunge the race at once into the weakness and helplessness of barbarism. To have created such beings as we are, and to have placed them in this world, without the light of the sun, would be no more cruel than for a government to suffer its laboring classes to grow up without knowledge.

In this fact, then, we find a solution of the problem that so long embarrassed inquirers. The reason why the mechanical and useful arts,— those arts which have done so much to civilize mankind, and which have given comforts and luxuries to the common laborer of the present day, such as kings and queens could not command three centuries ago,— the reason why these arts made no progress; and, until recently, indeed, can hardly be said to have had any thing more than a beginning, is, that the labor of the world was performed by ignorant men. As soon as some degree of intelligence dawned upon the workman, then a corresponding degree of improvement in his work followed. At first, this intelligence was confined to a very small number, and, therefore, improvements were few, and they followed each other only after long intervals. They uniformly began in the nations, and among the classes, where there was most intelligence. The middle classes of England, and the people of Holland and Scotland, have done a hundred times more than all the eastern hemisphere besides. What single improvement in art, or discovery in science, has ever originated in Spain, or throughout the vast empire of the Russias? But, just in proportion as intelligence,— that is, education,— has quickened and stimulated a greater and a greater number of minds, just in the same proportion have inventions and discoveries increased in their wonderfulness, and in the rapidity of their succession. The progression has been rather geometrical than arithmetical. By the laws of nature, it must be so. If among ten well-educated children, the chance is, that, at least, one of them will originate some new and useful process in the arts, or will discover some new scientific principle, or some new application of one, then among a hundred such well-educated children, there is a moral certainty that there will be more than ten such originators or discoverers of new utilities; for the action of the mind is like the action of fire; — one billet of wood will hardly burn alone, though dry as suns and north-west winds can make it, and though placed in range of a current of air; ten such billets will burn well together; but a hundred will create a heat fifty times as intense as ten; will make a current of air to fan their own flame, and consume even greenness itself.

THE ESSENTIAL CONDITIONS OF A WISE POLITICAL ECONOMY.

For the creation of wealth, then,—for the existence of a wealthy people and a wealthy nation,—intelligence is the grand condition. The number of improvers will increase, as the intellectual constituency, if I may so call it, increases. In former times, and in most parts of the world even at the present day, not one man in a million has ever had such a development of mind, as made it possible for him to become a contributor to art or science. Let this development precede, and contributions, numberless, and of inestimable value, will be sure to follow. That Political Economy, therefore, which busies itself above capital and labor, supply and demand, interest and rents, favorable and unfavorable balances of trade; but leaves out of account the element of a wide-spread mental development, is nought but stupendous folly. The greatest of all the arts in political economy is, to change a consumer into a producer: and the next greatest is, to increase the producer's producing power;—an end to be directly attained, by increasing his intelligence. For mere delving, an ignorant man is little better than a swine, whom he so much resembles in his appetites, and surpasses in his powers of mischief.

But there is a class of persons who are not unwilling to concede the advantages which education has over ignorance, both in the more rapid and perfect performance of all kinds of labor, and in the creation of all those mechanical instruments, through which nature stands ready to do the work of the world; but, while they acknowledge all this, they seem to think that the argument in favor of knowledge has lost much of its force; because mechanical ingenuity and scientific discovery must have nearly reached the outermost limit of possible advancement;—that either the powers of nature are exhausted, or human genius is in its decrepitude. The past achievements of the mind excite their admiration, but not their hope. They are regarded as the measure of what man can perform, but not as the promise of what he is yet to perform. They are accepted, not as a little earnest-money, but as full payment.

THE POSSIBILITIES OF HUMAN DEVELOPMENT ARE INFINITE.

Now, the view which I am constrained to take of the history and destiny of man, is exactly the contrary of this one. I hold all past achievements of the human mind to be rather in the nature of prophecy than of fulfilment;—the first-fruits of the beneficence of God, in endowing us with the faculties of perception, comparison, calculation, and causality, rather than the full harvest of their eventual development. For, look at the magnificent creation into which we have been brought, and at the adaptation of our faculties to understand, admire, and use it. All around us, are works worthy of an Infinite God; and we are led, by irresistible evidence, to believe, that just so far as we acquire His knowledge we shall be endued with His power. From history and from consciousness, we find ourselves capable of ever onward improvement, and, therefore, it seems to be a denial of first principles,—it seems no better than impiety,—to suppose that we shall ever become such finished scholars, that the works of the All-wise will have no new problem for our solution, and will, therefore, be able to teach us no longer. Nor is it any less than impiety to suppose that we shall ever so completely enlist the powers of nature in our service, that exhausted Omnipotence can reward our industry with no further bounties. This would be to suppose that we shall arrive at a period when our active and progressive natures will become passive and stationary; when we shall have nothing to do but to sit in indolent and inglorious contemplation of past achievements; and when, all aspirations having been lost in fruition, we shall have outlived the joys of hope and the rewards of effort, and no new glories will beckon us onward to new felicities.

Neither our faculties, nor their spheres of action, seem to have been projected on any such narrow plan. Ever-expanding powers are within us; eternity lies before us; and an Infinite Being, amidst His works, is the adorable object of these faculties, throughout this eternity. These, no height of attainment, which our powers will ever reach, and no length of duration to which the cycles of eternity shall ever have run, will enable us to exhaust, or fully to comprehend. To affirm the contrary, would be to affirm that our finite minds can embrace and encircle their Infinite Author, as his mind embraces and encircles ours. Our relation to our Maker, then, is a moral phase of the problem of the asymptote,—a line forever approaching a point which it can never reach.

And if we believe in our individual capacity for indefinite improvement, why should we doubt the capacity of the race for continued progress, as long as it dwells upon the earth? Can man "by searching find out God," in a physical sense, any more than in a moral one; or can all the generations of the race, by the longest and the profoundest investigations, ever fathom the depths of eternal wisdom and power, as they are incorporated into this earthly frame? However far, then, science and art may push their explorations, there will always be a frontier bounding their advances; there will always be a *terra incognita*, beyond the regions they have surveyed,— beyond the utmost verge of the horizon which the eye can see from the topmost pinnacle of existing discoveries. Each new adventurer can gain new trophies by penetrating still deeper into the illimitable solitudes, where alone Omnipotence dwells and works. The most perfect instrument which the brightest genius of any age may ever construct, will be excelled by another instrument made after a higher ideal of perfection by the brighter genius of a succeeding age. The most rapid processes of art known to any generation will be accelerated in the generation that shall follow it, and science will be found not only a plant of perennial growth, but, in each succeeding age, it will bear blossoms of a more celestial splendor, and fruits of beneficence unknown before.

Astronomers now tell us, that the sun is not a stationery orb, fixed and immovable at one place in the heavens; as, since the days of Copernicus, it had been supposed to be, but that, in some far-off region of immensity, at a distance wholly inconceivable by us, there is a central point of attraction, around which our sun, with its attendant train of planets, is performing a magnificent revolution; just as, within their narrow orbits, the planets of our local system are revolving about the sun. They tell us, further, that the circumference of this solar orbit is so vast, that, during the six thousand years which are supposed to have elapsed since the creation of Adam, the sun has not yet travelled through so much as one of the three hundred and sixty degrees that make up its mighty circle;— not through so much as one of those hundreds of astronomical spaces, through which it must move before it will complete a single revolution. What number of these immense circuits, the earth is destined to perform, or what part even of a single revolution it will accomplish, before it will meet with some such catastrophe, as will unfit it to be the abode of a race like ours, we know not; but we have no reason to believe, even if the mighty years of the solar revolutions should equal the number of our terrestrial years since the creation of Adam, that the race will ever have exhausted the earth of all the latent capacities for ministering to the improvement and happiness of man, with which God has endued it. No invention or discovery will ever be made, upon which the author can stand, and lift up his proud voice and exclaim, *I have found the last miracle of the miracle-working God.*

THE LAW UNDERLYING HUMAN DISCOVERY.

Now, so far as these natural and yet undeveloped resources of the earth are hereafter to be brought to light, and made the ministering servants of human welfare; we suppose they are to be brought to light by the exercise of the human faculties;— in the same way that all the scientific and mechanical improvements of past times have been brought to light,— that is, by education. And the greater the proportion of minds in any community, which are educated, and the more thorough and complete the education which is given them, the more rapidly, through these sublime stages of progress, will that community advance in all the means of enjoyment and elevation; and the more will it outstrip and outshine its less-educated neighbors. The advance-guard of education and intelligence will gather the virgin wealth of whatever region they explore as the reward of their knowledge, just as the Portuguese reaped the great harvest of the riches of India as their reward for discovering the new route of India.

VALUE OF ORIGINAL DISCOVERIES.

I know that it may be said, and said, too, not without a certain measure of truth, that, when a more intelligent community has made a discovery in science, or devised or perfected the processes of any art, a less intelligent community by its side may adopt and copy them; and thus make the improvements their own, by possession, though the invention belonged to another. After a bold navigator has opened a new channel of commerce, and, while he is gathering the first fruits of his sagacity, the stupid or the predatory may follow in his wake, and share the gains of his enterprise. Dr. Franklin may discover the uses of the lightning-rod; but, when once discovered, and the manner of its use exhibited, any half-taught son of Vulcan can make and erect one, by copying the given model. When a school-boy of New England has invented the cotton-gin, or perfected cotton machinery, the slaves of the south, stupid and ignorant as cattle,—" according to the form of the statute in such cases made and provided,"— can operate them with a greater or less degree of success and profit. But there are two considerations which show how inferior the condition of the aping community must always be to that of the originating one.

In the first place, all copying is in the nature of empiricism. The copyist operates blindly, and not on principle; and therefore he is constantly exposed to failure. In untried emergencies, he never knows what to do: for the light of example shines only in one direction; while it is the very nature of principle, like its Divine Author, to circumfuse its beams, and so to leave no darkness in any direction.

And, in the second place, even supposing the aping community to be able, after long delays and toils, to equal the originating one; still, before the period shall have elapsed which the pupil will require for studying out or copying the old lesson, his master will have studied out some new one;—will have discovered some new improvement, diffusive of new utility, and radiant with new beauty:—so that the distance will be kept as great as ever between him and the learner.

The slave States of this Union may buy cotton-machinery made by the intelligent mechanics of the free States, and they may train their slaves to work it with more or less skill; but, should they succeed ever so well; should they eventually become able to meet their entire home demand; it will nevertheless be true, that, in the mean time, the new wants and refinements, generated by the progress of the age, will demand some new fabric, requiring, for its manufacture, either more ingeniously-wrought machinery, or greater skill in the operator; and thus will the more educated community forever keep ahead of the less educated one. The progress of mankind may be compared to an ascending spiral. In moving upward along this spiral, the less intelligent community will see the more intelligent one at a point above its head and will labor on to overtake it; and, making another toilsome circuit, will at length reach the place where the victor had been seen: but, lo! the victor is not there; he, too, has made a circuit along the ascending curve, and is still far aloft, above the head of his pursuer.

In the wonderful development of the application of machinery to the purposes and needs of the agriculturist which took place when the farmers' boys all over the land were suddenly called to become soldiers in 1861–65, a striking illustration is furnished of this topic; while, in the direct line of his suggestions, great progress has been made as the result of the investigations and experiments undertaken by the several Land Grant Agricultural Colleges.

Another common idea is this: it is supposed that intelligence in workmen is relatively less important in agricultural labors, than in the mechanic and manufacturing arts. The great agricultural staples of the country,—corn, cotton, sugar, rice and so forth,—have been stigmatized, or at least characterized, as "coarser" products, and, therefore, requiring less skill and science for their culture and improvement than the fabrics of the loom and the workshop. This may be true, but I am, by no means, convinced of its truth. It seems to me, that there is, as yet, no adequate proof, that skill and science, if applied to agriculture, will not yield practical benefits, as copious and as wonderful as any that have rewarded the mechanician or the artisan, in any department of their labors. Why vegetable growths, so exquisite in their organization, animated by the mysterious principle of life, and so susceptive of all the influences of climate, whether good or ill:—why these should be called "coarser" than iron ore, or other unorganized metals, or any kind of wealth that is found in mines: or why cotton or flax, wool or leather, wood or grain, should be denominated "coarser," before they have been deprived of the principle of life than from it, and before they have lost the marvellous power of assimilating inorganic matter to their own peculiar substance, it is not easy to perceive. May it not yet be found, that a better knowledge of the laws that govern vegetable growth; a better knowledge of the properties and adaptations of different soils; a better knowledge of the conditions of fructification and germination, and of the mysterious chemistry that determines the quality of texture, color, flavor, and perfume; a better knowledge of the uncombined gases, and of the effect of light, heat, electricity, and other imponderable agents upon the size, rapidity, and variegation of vegetable growths:—in fine, a better knowledge of Vegetable Physiology, and of that, too, which may be called Vegetable Pathology, will redeem the whole circle of agricultural occupations from the stigma of requiring less intelligent cultivators than are required for other pursuits; and thus supply a new and irresistible argument in favor of diffusing a vastly increased amount of knowledge among our free field-laborers, and our rural population generally? The marvellous improvements which have been made under the auspices of the Massachusetts Horticultural Society, in horticulture, floriculture, and pomology, already betoken such a result.*

Now it is in these various ways that all the meass of human subsistence, comfort, improvement,— or what, in one word, we call wealth,— are created; additional wealth, new wealth,—not another man's earnings, not another nation's treasures or lands, tricked away by fraud, or wrested by force,— but substantially, and, for all practical purposes, knowledge-created, mind-created wealth, as much so, as though we had been endued with a miraculous power of turning a granite quarry into a city, at a word; or a wilderness into cultivated fields; or of commanding harvests to ripen in a day. To see a community acquiring and redoubling its wealth in this way; enriching itself without impoverishing others, without despoiling others, is it not a noble spectacle! And will not the community that gains its wealth in this way, ten times faster than any robber-nation ever did by plunder,— will not such a community be a model and a pattern for the nations; a type of excellence to be admired and followed by the world? Has Massachusetts no ambition to win the palm in so glorious a rivalry?

Recent discoveries of the inherent wealth-producing qualities of the cotton plant, long supposed to be of value only for its fibre, illustrate, in a striking manner, the theory here stated by Mr. Mann of the possibilities of new discoveries awaiting the advent of intelligent investigators into the properties and qualities of the plants that form the especial province of the agriculturist. Formerly, the presence of the seed in the cotton was the great obstacle to the profitable production of the plant. Eli Whitney's invention removed that obstacle and revolutionized the textile manufactures of the world. For years the seed was only something to be rid of. Finally some one suggested that the seeds contained oil, and presses for extracting this were invented; and, very gradually, cotton-seed oil became a recognized article of commerce; the refuse mass of seed was found to be available as food for cattle, but, until within a few months, the hulls of the seed were regarded as useless, save for fuel; now (1889) it is asserted, on the strength of successful experiments by stock raisers, that these "useless" hulls make the best possible fattening foods for cattle. Thus, under the benignant sun of Freedom, Intelligence, beginning to utilize not only long-neglected mineral wealth but hitherto undiscovered riches of agricultural products, opens to the South new highways to Fortune.

CONSTANT ASPIRATION THE CONDITION PRECEDENT OF IMPROVEMENT.

But suppose that Massachusetts, notwithstanding her deplorable inferiority, in all natural resources, as compared with other States, should be content to be their equal only in the means of education, and in the development of the intelligence of her present children and her future citizens;— down, down to what a despicable depth of inferiority would she suddenly plunge! Her ancient glory would become dim. No historian, no orator, no poet, would rise up among her children. Her sons would cease, as now, to fill chairs in the halls of learning in more than half the States of the Union. Her jurists would no longer expound the laws of nature, of nations, and of States, to guide the judicial tribunals of the country. Her skilled artisans and master-mechanics would not be sought for, wherever, throughout the land, educated labor is wanted. Her ship-captains would be driven home from every ocean by more successful competitors. At home, a narrowing in the range of thought and action; a lowering of the tone of life and enterprise; a straitening in the means of living and of culture; a sinking in spirit, and in all laudable and generous ambitions; the rearing of sons to obscurity and of daughters to vulgarity, would mark the incoming of a degenerate age;— an age too ignorant to know its own ignorance; too shameless to mourn its degradation; and too spiritless even to rise with recuperative energy from its guilty fall. But little less disastrous would it be to stop where we now are, instead of pressing onward with invigorated strength to a further goal. What has been done is not the fulfilment or consummation of our work. It only affords better vantage-ground, from which our successors can start anew, in a nobler career of improvement. And if there is any one thing for which the friends of humanity have reason to join in a universal song of thanksgiving to Heaven, it is, that there is a large and an increasing body of people in Massachusetts who cannot be beguiled or persuaded into the belief that our Common Schools are what they may and should be; and who, with the sincerest good-will and warmest affections towards the higher institutions of learning, are yet resolved that the education of the people at large,— of the sons and daughters of farmers, mechanics, tradesmen, operatives, and laborers of all kinds,— shall be carried to a point of perfection indefinitely higher than it has yet reached.*

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* As an illustration of the value of knowledge in agricultural pursuits, it may be mentioned, that the researches and discoveries, by M. Meneville, in regard to the fly which was lately so destructive to the olive in the south of France, have increased the annual product of this fruit almost a million of dollars' worth. When would an ignorant man, or a slave, have made such a discovery?

The arguments in favor of the education of the citizens in a knowledge of the relations of the government to the material prosperity and to the moral welfare of the community, are forcibly stated in the section of Mr. Mann's report, from which the following extracts are taken:

POLITICAL EDUCATION.

The necessity of general intelligence,— that is, of education, (for I use the terms as substantially synonymous; because general intelligence can never exist without general education, and general education will be sure to produce general intelligence,) — the necessity of general intelligence, under a republican form of government, like most other very important truths, has become a very trite one. It is so trite, indeed, as to have lost much of its force by its familiarity. Almost all the champions of education seize upon this argument, first of all; because it is so simple as to be understood by the ignorant, and so strong as to convince the sceptical. Nothing would be easier than to follow in the train of so many writers, and to demonstrate, by logic, by history, and by the nature of the case, that a republican form of government, without intelligence in the people, must be, on a vast scale, what a mad-house, without superintendent or keepers, would be, on a small one; — the despotism of a few succeeded by universal anarchy, and anarchy by despotism, with no change but from bad to worse. Want of space and time alike forbid me to attempt any full development of the merits of this theme; but yet, in the closing one of a series of reports, partaking somewhat of the nature of a summary of former arguments, an omission of this topic would suggest to the comprehensive mind the idea of incompleteness.

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* In the letter of the honorable Abbott Lawrence, making a donation of fifty thousand dollars, for the purpose of founding a Scientific School at Cambridge, (to which he has since added fifty thousand dollars more,) the following expression occurs: — "Elementary education appears to be well provided for in Massachusetts." And, in the Memorial in behalf of the three Colleges,— Harvard, Amherst, and Williams,— presented to the Legislature, in January, 1848, and signed by each of the three Presidents of those institutions, it is said:— "The provision [in Massachusetts] for elementary education, * * * seems to be all that can be desired, or that can be advantageously done by the Legislature." The average salaries of female teachers throughout the State, at the time when these declarations were made, was only $8.55 a month, (exclusive of board,) which, as the average length of the schools was only eight months, would give to this most faithful and meritorious class of persons, but $68.40 a year. The whole value of the apparatus, in all the schools of the State, was but $23,826. And the whole number of volumes in their libraries was only 91,539, or an average of but twenty-five volumes for each school. In accordance with the prayer of the Memorial, the Committee on Education reported a bill, making a grant of half a million of dollars to the colleges. The House of Representatives, after maturely considering the bill, changed the destination of the money from the Colleges to the Common Schools, and then passed it. The donation of Mr. Lawrence will be highly beneficial to the few hundreds of students who will have the direct enjoyment of his munificence; and, through them, it will also benefit the State. So, too, would the contemplated grant to the colleges. Thus far, it is believed, all liberal minds will agree. But what is needed, is, the universal prevalence of the further idea, that there are two hundred thousand children in the State, each one of whom would be far more than proportionally benefited by the expenditure for their improved education of one-tenth part of sums so liberal."

That the affairs of a great nation or state are exceedingly complicated and momentous, no one will dispute. Nor will it be questioned that the degree of intelligence that superintends, should be proportioned to the magnitude of the interests superintended. He who scoops out a wooden dish needs less skill than the maker of a steam-engine or a telescope. The dealer in small wares requires less knowledge than the merchant who exports and imports to and from all quarters of the globe. An ambassador cannot execute his functions with the stock of attainments or of talents sufficient for a parish clerk. Indeed, it is clear, that the want of *adequate* intelligence,—of intelligence *commensurate* with the nature of the duties to be performed,—will bring ruin or disaster upon any department. A merchant loses his intelligence, and he becomes a bankrupt. A lawyer loses his intelligence, and he forfeits all the interests of his clients. Intelligence abandons a physician, and his patients die, with more than the pains of natural dissolution. Should judges upon the bench be bereft of this guide, what havoc would be made of the property and the innocence of men! Let this counsellor be taken from executive officers, and the penalties due to the wicked would be visited upon the righteous, while the rewards and immunities of the righteous would be bestowed upon the guilty. And so, should intelligence desert the halls of legislation, weakness, rashness, contradiction, and error, would glare out from every page of the statute book. Now, as a republican government represents almost all interests, whether social, civil, or military, the necessity of a degree of intelligence adequate to the due administration of them all, is so self-evident, that a bare statement is the best argument.

INTELLIGENT VOTERS CHOOSE WISE LEGISLATORS AND VICE VERSA.

But in the possession of this attribute of intelligence, elective legislators will never far surpass their electors. By a natural law, like that which regulates the equilibrium of fluids, elector and elected, appointer and appointee, tend to the same level. It is not more certain that a wise and enlightened constituency will refuse to invest a reckless and profligate man with office, or discard him if accidentally chosen, than it is that a foolish or immoral constituency will discard or eject a wise man. This law of assimilation, between the choosers and the chosen, results, not only from the fact that the voter originally selects his representative according to the affinities of good or of ill, of wisdom or of folly, which exist between them; but if the legislator enacts or favors a law which is too wise for the constituent to understand, or too just for him to approve, the next election will set him aside as certainly as if he had made open merchandise of the dearest interests of the people, by perjury and for a bribe. And if the infinitely Just and Good, in giving laws to the Jews, recognized the "hardness of their hearts," how much more will an earthly ruler recognize the baseness or wickedness of the people, when his heart is as hard as theirs! In a republican government, legislators are a mirror reflecting the moral countenance of their constituents. And hence it is, that the establishment of a republican government, without well-appointed and efficient means for the universal education of the people, is the most rash and fool-hardy experiment ever tried by man. Its fatal results may not be immediately developed,—they may not follow as the thunder follows the lightning,—for time is an element in maturing them, and the calamity is too great to be prepared in a day; but, like the slow-accumulating avalanche, they will grow more terrific by delay, and, at length, though it may be at a late hour, will overwhelm with ruin whatever lies athwart their path.

THE DANGERS THAT THREATEN A REPUBLIC OF IGNORANT CITIZENS.

It may be an easy thing to make a republic; but it is a very laborious thing to make republicans; and woe to the republic that rests upon no better foundations than ignorance, selfishness, and passion. Such a republic may grow in numbers and in wealth. As an avaricious man adds acres to his lands, so its rapacious government may increase its own darkness by annexing provinces and states to its ignorant domain. Its armies may be invincible, and its fleets may strike terror into nations on the opposite sides of the globe, at the same hour. Vast in its extent, and enriched with all the prodigality of nature, it may possess every capacity and opportunity of being great, and of doing good. But if such a republic be devoid of intelligence, it will only the more closely resemble an obscene giant who has waxed strong in his youth, and grown wanton in his strength; whose brain has been developed only in the region of the appetites and passions, and not in the organs of reason and conscience; and who, therefore, is boastful of his bulk alone, and glories in the weight of his heel and in the destruction of his arm. Such a republic, with all its noble capacities for beneficence, will rush with the speed of a whirlwind to an ignominious end; and all good men of after-times would be fain to weep over its downfall, did not their scorn and contempt at its folly and its wickedness, repress all sorrow for its fate.

As the merits of this subject cannot even be sketched on the present occasion, I will confine myself to a single illustration, showing how an unenlightened people will permit, and sometimes will even require, that their government should injure their own interests

THE COLLECTION OF REVENUE.

A universal function of government,— one that has pertained to every government that has ever existed, and doubtless will continue to do so while the world stands,— is the collection of revenues. The government must be maintained; but it has no power of earning or of creating wealth to defray its own expenses. It must, therefore, be supported by revenues derived from the people.

In absolute despotisms, arbitrary exactions are made upon all the possessors of wealth; or upon all but a few excepted favorites. Where a pretence for such exactions is wanted, acts which are not crimes are declared to be criminal, so that the ruler may claim a forfeiture, or penalty, for the performance of deeds, which, before any tribunal of conscience, or of justice, would be held innocent. *Ex post facto* laws are made; that is, laws which act backwards, and subject an act to punishment, after the law, which was not punishable at the time it was done; — which might have been, indeed, not only guiltless but laudable at the time of its performance.

Now, it must be obvious, that such methods of raising revenue must have an almost annihilating effect upon the production of wealth; for no man will earn money beyond his immediate necessities, when the very fact of his acquisition only exposed him to pillage. When the richest men are worst plundered, poverty becomes the privilege. Intelligence, though it had been that of the Prince of Darkness, would have saved nations from this cause of poverty.

UNWISE METHODS OF RAISING REVENUE.

Governments, less arbitrary, have resorted to expedients for self-support scarcely less baneful to the general welfare. Among these, are monopolies,— such as that, for instance, by which the Pacha of Egypt required all the cotton grown by his subjects to be sold to him, at his own price, that he might resell it at an advanced one; or that, by which the French King exercised the privilege of selling all the tobacco consumed in his kingdom, and then sold out the privilege to sell, at an enormous price. Some governments have derived a revenue from the sale of offices, even those which demand, for the fit discharge of their duties, the highest talents and the purest integrity,— such as the judicial,— and so have cared everything for the amount of the bribe, and nothing for the fitness of the incumbent. In all such cases, the most vital and enduring interests of the community have been sacrificed to the incidental benefit of revenue; — a policy vastly more ruinous than that of the incendiary who burns a house that he may steal a shilling.

EVILS OF LOTTERIES.

Even the freest and most enlightened governments have been guilty of similar improvidences and follies. The raising of revenue from licensed lotteries furnishes a signal illustration. For every unit of gain to the public treasury, by the levy of a tax on the sale of lottery tickets, hundreds of loss are subtracted from the public wealth. For, it is obvious, in the first place, that lotteries *create* no wealth. They add nothing to the aggregate of silver and gold, belonging to a community, any more than they add to the number of its houses or the extent of its lands. They can do nothing more than to transfer one man's money to another man's pocket. Then they occupy the time of many individuals, who otherwise might be usefully employed in the creation or augmentation of the public wealth. Besides this, the expenses actually incurred by agencies, brokerage, advertisements, apparatus, and so forth, is not inconsiderable. It is also true, that the poorest class of people are usually the purchasers of lottery tickets,— on the same principle that a man must first be drowning before he will catch at a straw,— and generally with the same result. Thus, all the evils of poverty are aggravated by the loss of a part of its pittance. Then, adventuring in this traffic substitutes hopes of gain, founded on chance, for the certainties of regular industry. * * * .

* * * Take all these evils into consideration, and take into consideration, also, what is far more important than all these evils united, the impositions and the frauds which accompany the whole operation, and which often bear as great a pro-

portion to the fair-dealing as the blanks bear to the prizes;—take all these pecuniary, social and moral mischiefs into account, and how is it possible for any intelligent legislator, for the sake of a little incidental revenue, ever to legalize an institution, which destroys wealth by wholesale, and cankers the morals of entire classes of the people?

And, yet, until within a few years, there was not a State in this whole Union, whose Legislature did not stand so low, not only in the scale of Morals but of Political Economy, as to authorize lotteries. Sometimes they were granted for a paltry revenue, to be paid into the treasury; sometimes to aid in the erection of public works,—to build a bridge, a canal, or *a church!!** Just in proportion as intelligence has advanced, petitions for lotteries have been refused, and the sale of lottery tickets interdicted by law; until now, they are driven almost exclusively into the southern and southwestern States. There they await the dawning of that general enlightenment, which Common Schools could so rapidly give, to be banished from the country forever.

On the clearest principles of Morality and Political Economy, the licensing of houses for the sale of intoxicating drinks, of gaming-houses, and houses of ill-fame, for the ignominious purpose of raising a revenue out of the misery and licentiousness of men, stands even on a more unsound and criminal footing, than legalizing the pest of lotteries. Yet, all this is done, even at the present day, by legislators who would think it an indignity, if they were denied an exalted place on the roll of enlightened, patriotic, and Christian men. * * *

OBJECTIONS TO THE MULTIPLICATION OF OFFICIAL OATHS.

The multiplication of oaths is another signal illustration of the fact, how prone incompetent legislators ever are to sacrifice the greater interest to the less,—the spiritual to the outward, the enduring to the temporary. Adherence to truth is so necessary among men, that even the lowest instincts of self-interest will visit the falsifier, with retribution though honor and conscience should not. But the utterance of truth, very generally speaking, is considered more in the light of an obligation between man and man, than as a due to Heaven; and there are many who would not hesitate to tell a falsehood, who would tremble at the commission of perjury. But governments, for some collateral and incidental benefit,—most generally for the purpose of securing themselves against fraud in the collection of revenues,—impose an oath upon men, not merely where the oath-taker is adversly interested, but where, from the nature of the case, he cannot certainly determine the truth of the statement to which he deposes. This leads to moral laxity, and relaxes laxity itself. Hence, in mercantile communities, there has arisen a class of oaths, called "Custom House oaths,"—an appellation which indicates that men swear, if not to what they know to be untrue, yet, at least, to what they do not know to be true. Often, the oath is administered to persons who are under the strongest temptations to perjury, and where, too, the danger of detection is small. This is Perjury made easy; for the step is a short one, between swearing to a thing as true, with only a general inference, or supposition, that it is so, and swearing to a known untruth.

Now, can any money compensate government for contaminating public morals? Or, in a republic, which is a government of the people by the people, can they afford to barter their own integrity, in order to get a little of their own money, out of their own pockets, into their own public treasury, whence it is so soon to flow back into their own pockets again? Every legislator should be a political economist, and every voter should know, at least, the leading elements of political economy, and be able to understand their application to the affairs of life; but, surely, that political economy is a delusion and a cheat, which does not hold the morals of the community as the primal element in its prosperity; and the prayer, "Lead us not into temptation," is one which may be as appropriately addressed by a people to its rulers, as by a frail and fallible mortal to his Maker.

I have now given a hasty review of a single class of errors, those pertaining to the collection of revenue,—into which governments have fallen, through a want of intelligence;—through a want of such intelligence, it may be added, as any discreet and reflecting man would exercise in the management of his own affairs. And when will rulers be wiser than they have been? Never, until the people, to whom they are responsible, shall permit it and demand it. Never will wisdom preside in the halls of legislation and its profound utterances be recorded on the pages of the statute book, until Common Schools,—or some other agency of equal power, not yet discovered,—shall create a more far-seeing intelligence and a purer morality than has ever yet existed among communities of men. Legislators in the execution of their high guardianship over public interests, will never secure to the State even the greatest amount of wealth, while they seek to obtain it at the price of morality. It is only when the virtue of the people is supremely cared for, that they will discover the comprehensive meaning of the Scripture, that Godliness is profitable unto all things.

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*When a church is built by lottery, can there be any doubt which has the best side of the bargain, the Evil Spirit or the Good?

IN ALL COUNTRIES THE RULERS ARE EDUCATED FOR THEIR COMING DUTIES; WHERE THE PEOPLE ARE TO RULE THE PEOPLE SHOULD LIKEWISE BE SO EDUCATED.

However elevated the moral character of a constituency may be; however well informed in matters of general science or history, yet they must, if citizens of a republic, understand something of the true nature and functions of the government under which they live. That any one who is to participate in the government of a country, when he becomes a man, should receive no instruction respecting the nature and functions of the government he is afterwards to administer, is a political solecism. In all nations, hardly excepting the most rude and barbarous, the future sovereign receives some training which is supposed to fit him for the exercise of the powers and duties of his anticipated station. Where, by force of law, the government devolves upon the heir, while yet in a state of legal infancy, some regency, or other substitute, is appointed, to act in his stead, until his arrival at mature age; and, in the meantime, he is subjected to such a course of study and discipline, as will tend to prepare him, according to the political theory of the time and the place, to assume the reins of authority at the appointed age. If, in England, or in the most enlightened European monarchies, it would be a proof of restored barbarism, to permit the future sovereign to grow up without any knowledge of his duties,—and who can doubt that it would be such a proof,—then, surely, it would be not less a proof of restored, or of never-removed barbarism, amongst us, to empower any individual to use the elective franchise, without preparing him for so momentous a trust. Hence, the constitution of the United States, and of our own State, should be made a study in our Public Schools. The partition of the powers of government into the three coördinate branches,—legislative, judicial, and executive,—with the duties appropriately devolving upon each; the mode of electing or of appointing all officers, with the reasons on which it was founded; and, especially, the duty of every citizen, in a government of laws, to appeal to the courts for redress, in all cases of alleged wrong, instead of undertaking to vindicate his own rights by his own arm; and, in a government where the people are the acknowledged sources of power, the duty of changing laws aud rulers by an appeal to the ballot, and not by rebellion, should be taught to all the children until they are fully understood.

THE BALLOT A SACRED TRUST.

Had the obligations of the future citizen been sedulously inculcated upon all the children of this Republic, would the patriot have had to mourn over so many instances, where the voter, not being able to accomplish his purpose by voting, has proceeded to accomplish it by violence; where, agreeing with his fellow-citizens, to use the machinery of the ballot, he makes a tacit reservation, that, if that machinery does not move according to his pleasure, he will wrest or break it? If the responsibleness and value of the elective franchise were duly appreciated, the day of our State and National elections would be among the most solemn and religious days in the calendar. Men would approach them, not only with preparation and solicitude, but with the sobriety and solemnity, with which discreet and religious-minded men meet the great crises of life. No man would throw away his vote, through caprice or wantonness, any more than he would throw away his estate, or sell his family into bondage. No man would cast his vote through malice or revenge, any more than a good surgeon would amputate a limb, or a good navigator sail through perilous straits, under the same criminal passions.

CAN THE FUNDAMENTAL PRINCIPLES OF THE NATIONAL GOVERNMENT BE TAUGHT IN PUBLIC SCHOOLS?

But, perhaps, it will be objected, that the constitution is subject to different readings, or that the policy of different administrations has become the subject of party strife; and, therefore, if anything of constitutional or political law is introduced into our schools, there is danger that teachers will be chosen on account of their affinities to this or that political party; or that teachers will feign affinities which they do not feel, in order that they may be chosen; and so each school-room will at length become a miniature political club-room, exploding with political resolves, or flaming out with political addresses, prepared by beardless boys, in scarcely legible handwriting, and in worse grammar.

With the most limited exercise of discretion, all apprehensions of this kind are wholly groundless. There are different readings of the constitution, it is true: and there are partisan topics which agitate the country from side to side; but the controverted points, compared with those about which there is no dispute, do not bear the proportion of one to a hundred. And what is more, no man is qualified, or can be qualified, to discuss the disputable questions, unless previously and thoroughly versed in those questions, about which there is no dispute. In the terms and principles common to all, and recognized by all, is to be found the only common medium of language and of idea, by which the parties can become intelligible to each other; and there, too, is the only common ground, whence the arguments of the disputants can be drawn."

* * * "Surely, between these extremes, there must be a medium not difficult to be found. And is not this the middle course, which all sensible and judicious men, all patriots, and all genuine republicans, must approve?—namely, that those articles in the creed of republicanism, which are accepted by all, believed in by all, and which form the common basis of our political faith, should be taught to all. But when the teacher, in the course of his lessons or lectures on the fundamental law, arrives at a controverted text, he is either to read it without comment or remark; or, at most, he is only to say that the passage is the subject of disputation, and that the school-room is neither the tribunal to adjudicate, nor the forum to discuss it.

Such being the rule established by common consent, and such the practice, observed with fidelity under it, it will come to be universally understood, that political proselytism is no function of the school; but that all indoctrination into matters of controversy between hostile political parties is to be elsewhere sought for, and elsewhere imparted. Thus, may all the children of the Commonwealth receive instruction in the great essentials of political knowledge,—in those elementary ideas without which they will never be able to investigate more recondite and debatable questions;—thus, will the only practicable method be adopted for discovering new truths, and for discarding,—instead of perpetuating,—old errors; and thus, too, will that pernicious race of intolerant zealots, whose whole faith may be summed up in two articles,—that they, themselves, are always infallibly right, and that all dissenters are certainly wrong,—be extinguished,—extinguished, not by violence, nor by proscription, but by the more copious inflowing of the light of truth."

The Theory justifying the establishment of Public Schools, the reasons why the community may justly be taxed for their support, and the reasons why the tenets of any particular religious belief should *not* be taught in such schools, are thus tersely and forcibly set forth:

* * * . The very terms, *Public School*, and *Common Schools*, bear upon their face, that they are schools which the children of the entire community may attend. Every man, not on the pauper list, is taxed for their support. But he is not taxed to support them as special religious institutions; if he were, it would satisfy, at once, the largest definition of a Religious Establishment. But he is taxed to support them, as a *preventive* means against dishonesty, against fraud, and against violence; on the same principle that he is taxed to support criminal courts as a *punitive* means against the same offences. He is taxed to support schools, on the same principle that he is taxed to support paupers; because a child without education is poorer and more wretched than a man without bread. He is taxed to support schools, on the same principle that he would be taxed to defend the nation against foreign invasion, or against rapine committed by a foreign foe; because the general prevalence of ignorance, superstition, and vice, will breed Goth and Vandal at home, more fatal to the public well-being, than any Goth or Vandal from abroad. And, finally, he is taxed to support schools, because they are the most effective means of developing and training those powers and faculties in a child, by which, when he becomes a man, he may understand what his highest interests and his highest duties are; and may be, in fact, and not in name only, a free agent.

NEITHER PARTISAN POLITICS NOR RELIGIOUS CREEDS MAY BE TAUGHT IN THESE SCHOOLS.

The elements of a political education are not bestowed upon any school child, for the purpose of making him vote with this or that political party, when he becomes of age;

but for the purpose of enabling him to choose for himself, with which party he will vote. So the religious education which a child receives at school, is not imparted to him, for the purpose of making him join this or that denomination, when he arrives at years of discretion, but for the purpose of enabling him to judge for himself, according to the dictates of his own reason and conscience, what his religious obligations are, and whither they lead. But if a man is taxed to support a school, where religious doctrines are inculcated which he believes to be false, and which he believes that God condemns; then he is excluded from the school by the Divine law, at the same time that he is compelled to support it by the human law. This is a double wrong. It is politically wrong, because, if such a man educates his children at all, he must educate them elsewhere, and thus pay two taxes, while some of his neighbors pay less than their due proportion of one; and it is religiously wrong, because he is constrained, by human power, to promote what he believes the Divine Power forbids. The principle involved in such a course is pregnant with all tyrannical consequences. It is broad enough to sustain any claim of ecclesiastical domination, ever made in the darkest ages of the world. Every religious persecution, since the time of Constantine, may find its warrant in it, and can be legitimately defended upon it. If a man's estate may be taken from him to pay for teaching a creed which he believes to be false, his children can be taken from him to be taught the same creed; and he, too, may be punished to any extent, for not voluntarily surrendering both his estate and his offspring. If his children can be compulsorily taken and taught to believe a creed which the parent disbelieves, then the parent can be compulsorily taken and made to subscribe the same creed. And, in regard to the extent of the penalties which may be invoked to compel conformity, there is no stopping-place between taking a penny and inflicting perdition. It is only necessary to call a man's reason and conscience and religious faith, by the name of recusancy, or contumacy, or heresy, and so to inscribe them on the statute-book; and then the non-conformist or dissenter may be subdued by steel, or cord, or fire; by anathema and excommunication in this life, and the terrors of endless perdition in the next. Surely, that system cannot be an irreligious, an anti-Christian, or an un-Christian one, whose first and cardinal principle it is, to recognize and protect the highest and dearest of all human interests, and of all human rights.

LIMITS OF JURISDICTION DEFINED.

Again; it seems almost too clear for exposition, that our system, *in one of its most essential features*, is not only, not an irreligious one, but that it is more strictly religious than any other which has ever yet been adopted. Every intelligent man understands what is meant by the term "Jurisdiction." It is the rightful authority which one person, or one body of men, exercises over another person, or persons. Every intelligent man understands, that there are some things which are within the jurisdiction of government, and other things which are not within it. As Americans, we understand that there is a line, dividing the jurisdiction of the State Governments from the jurisdiction of the Federal Government; and that it is a violation of the constitutions of both, for either to invade the legitimate sphere of action which belongs to the other. We all understand, that neither any State in this Union, nor the Union itself, has any right of interference between the British sovereign and a British subject, or between the French government and a citizen of France. Let this doctrine be applied to the relations which our fellow-citizens bear to the rulers who have authority over them. Primarily, religious rights embrace the relations between the creature and the Creator, just as political rights embrace the relations between subject and sovereign, or between a free citizen and the government of his choice; and just as parental rights embrace the relation between parent and child. Rights, therefore, which are strictly religious, lie out of, and beyond the jurisdiction of civil governments. They belong, exclusively, to the jurisdiction of the Divine government. If, then, the State of Massachusetts has no right of forcible interference between an Englishman, or a Frenchman, and the English or French government; still less, far less, has it any right of forcible interference, between the soul of man, and the King and Lord to whom that soul owes undivided and supreme allegiance. Civil society may exist, or it may cease to exist. Civil government may continue for centuries in the hands of the same dynasty, or it may change hands by revolution, with every new moon. The man, outcast and outlawed to-day, and to whom, therefore, we owe no obedience, may be rightfully installed in office to-morrow, and may then require submission to his legitimate authority. The civil governor may resign, or be deposed; the frame-work of the government may be changed, or its laws altered; so that the duty of allegiance to a temporal sovereign may have a succession of new objects, or a succession of new definitions. But the relation of man to his Maker never changes. Its object and its obligations are im-

immutable. The jurisdiction which God exercises over the religious obligations which his rational and accountable offspring owe to Him, excludes human jurisdiction. And, hence, is it, that religious rights are inalienable rights. Hence, also, it is, that it is an infinitely greater offence to invade the special and exclusive jurisdiction which the Creator claims over the consciences and hearts of men, than it would be to invade the jurisdiction which any foreign nation rightfully possesses over its own subjects or citizens. The latter would be only an offence against international law; the former is treason against the majesty of Heaven. The one violates secular and temporal rights only; the other violates sacred and eternal ones. When the British Government passed its various statutes of *præmunire*, as they were called,—statutes to prevent the Roman Pontiff from interfering between the British sovereign and the British subject,—it was itself constantly enacting and enforcing laws which interfered between the Sovereign of the universe and His subjects upon earth, far more directly and aggressively, than any edict of the Roman See ever interfered with any allegiance due from a British subject to the self-styled Defender of the Faith.

THE PUBLIC SCHOOLS NOT IRRELIGIOUS.

It was in consequence of laws that invaded the direct and exclusive jurisdiction which our Father in heaven exercises over his children upon earth, that the Pilgrims fled from their native land, to that which is the land of our nativity. They sought a residence so remote and so inaccessible, in the hope that the prerogatives of the Divine Magistrate might no longer be set at nought by the usurpations of the civil power. Was it not an irreligious and an impious act, on the part of the British government, to pursue our ancestors with such cruel penalties and privations, as to drive them into banishment? Was it not a religious and a pious act in the Pilgrim Fathers to seek a place of refuge, where the arm of earthly power could neither restrain them from worshipping God in the manner which they believed to be most acceptable to Him, nor command their worship in a manner believed to be unacceptable? And if it was irreligious in the British government to violate freedom of conscience in the case of our forefathers, two centuries ago, then it is more flagrantly irreligious to repeat the oppression, in this more enlightened age of the world. If it was a religious act in our forefathers to escape from ecclesiastical tyranny, then it must be in the strictest conformity to religion for us to abstain from all religious oppression over others; and to oppose it wherever it is threatened. And this abstinence from religious oppression, this acknowledgement of the rights of others, this explicit recognition and avowal of the supreme and exclusive jurisdiction of Heaven, and this denial of the right of any earthly power to encroach upon that jurisdiction, is precisely what the Massachusetts school system purports to do in theory, and what it does actually in practice. Hence I infer that our system is not an irreligious one, but is in the strictest accordance with religion and its obligations.

THE PUBLIC SCHOOLS NEITHER ANTI-CHRISTIAN NOR UN-CHRISTIAN.

It is still easier to prove that the Massachusetts school system is not anti-Christian nor un-Christian. The Bible is the acknowledged expositor of Christianity. In strictness, Christianity has no other authoritative expounder. This Bible is in our Common Schools, by common consent. Twelve years ago, it was not in all the schools. Contrary to the genius of our government, if not contrary to the express letter of the law, it had been used for sectarian purposes,—to prove one sect to be right, and others to be wrong. Hence, it had been excluded from the schools of some towns, by an express vote. But since the law and the reasons on which it is founded, have been more fully explained and better understood; and since sectarian instruction has, to a great extent, ceased to be given, the Bible has been restored. I am not aware of the existence of a single town in the State, in whose schools it is not now introduced, either by a direct vote of the school committee, or by such general desire and acquiescence, as supersede the necessity of a vote. In all my intercourse, for twelve years, whether personal or by letter, with all the school officers in the State, and with tens of thousands of individuals in it, I have never heard an objection made to the use of the Bible in school, except in one or two instances; and, in those cases, the objection was put upon the ground, that daily familiarity with the book, in school, would tend to impair a reverence for it.

HOW RELIGIOUS FREEDOM MAY BE PRESERVED.

* * * If, then, a government would recognize and protect the rights of religious freedom, it must abstain from subjugating the capacities of its children to any legal standard of religious faith, with as great fidelity as it abstains from controlling the opinions of men. It must meet the unquestionable fact, that the old spirit of religious domination is adopting new measures to accomplish its work,— measures, which, if successful, will be as fatal to the liberties of mankind, as those which were practised in by-gone days of violence and terror. These new measures are aimed at children instead of men. They propose to supersede the necessity of subduing free thought, *in the mind of the adult*, by forestalling the development of any capacity of free thought, *in the mind of the child.* They expect to find it easier to subdue the free agency of children, by binding them in fetters of bigotry, than to subdue the free agency of men, by binding them in fetters of iron. For this purpose, some are attempting to deprive children of their right to labor, and, of course, of their daily bread, unless they will attend a government school, and receive its sectarian instruction. Some are attempting to withhold all means, even of secular education, from the poor, and thus punish them with ignorance, unless, with the secular knowledge which they desire, they will accept theological knowledge which they condemn. Others, still, are striving to break down all free Public School systems, where they exist, and to prevent their establishment, where they do not exist, in the hope, that on the downfall of these, *their* system will succeed. The sovereign antidote against these machinations, is, Free Schools for all, and the right of every parent to determine the religious education of his children.

This topic invites far more extended exposition; but this must suffice. In bidding an official Farewell to a system, with which I have been so long connected, to which I have devoted my means, my strength, my health, twelve years of time, and, doubtless, twice that number of years from what might otherwise have been my term of life, I have felt bound to submit these brief views in its defence. In justice to my own name and memory; in justice to the Board of which I was originally a member, and from which I have always sought counsel and guidance; and in justice to thousands of the most wise, upright, and religious-minded men in Massachusetts, who have been my fellow-laborers in advancing the great cause of Popular Education, under the auspices of this system, I have felt bound to vindicate it from the aspersions cast upon it, and to show its consonance with the eternal principles of equity and justice. I have felt bound to show, that, so far from its being an irreligious, an anti-Christian, or an un-Christian system, it is a system which recognizes religious obligations in their fullest extent; that it is a system which invokes a religious spirit, and can never be fitly administered without such a spirit; that it inculcates the great commands, upon which hang all the law and the prophets; that it welcomes the Bible, and therefore welcomes all the doctrines which the Bible really contains, and that it listens to these doctrines so reverently, that, for the time being, it will not suffer any rash mortal to thrust in his interpolations of their meaning, or overlay the text with any of the "many inventions" which the heart of man has sought out. It is a system, however, which leaves open all other means of instruction,— the pulpits, the Sunday schools, the Bible classes, the catechisms, of all denominations,— to be employed according to the preferences of individual parents. It is a system which restrains itself from teaching, that what it does teach is all that needs to be taught, or that should be taught; but leaves this to be decided by each man for himself, according to the light of his reason and conscience; and on his responsibility to that Great Being, who, in holding him to an account for the things done in the body, will hold him to the strictest account for the manner in which he has "trained up" his children.

Such, then, in a religious point of view, is the Massachusetts system of Common Schools. Reverently, it recognizes and affirms the sovereign rights of the Creator; sedulously and sacredly it guards the religious rights of the creature; while it seeks to remove all hinderances, and to supply all furtherances to a filial and paternal communion between man and his Maker. In a social and political sense, it is a *Free* School system. It knows no distinction of rich and poor, of bond and free, or between those who, in the imperfect light of this world, are seeking, through different avenues, to reach the gate of heaven. Without money and without price, it throws open its doors, and spreads the table of its bounty, for all the children of the State. Like the sun, it shines, not only upon the good, but upon the evil, that they may become good; and, like the rain, its blessings descend, not only upon the just, but upon the unjust, that their injustice may depart from them and be known no more.

WHAT SCHOOLS HAVE DONE FOR MASSACHUSETTS.

To the great founders of this system, we look back with filial reverence and love. Amid the barrenness of the land, and in utter destitution of wealth, they coined the rude comforts, and even the necessaries of life, into means for its generous support. Though, as laborers by day, they subdued the wilderness, and, as sentinels by night, they guarded the camp, yet they found time for the vigilant administration and oversight of the schools, in the day of their infancy and weakness. But for this single institution, into which they transfused so much of their means and of their strength, and of which they have made us the inheritors, how different would our lot and our life have been! Upon us, its accumulated blessings have descended. It has saved us from innumerable pains and perils, that would otherwise have been our fate;—from the physical wretchedness, that is impotent to work out its own relief; from the darkness of the intellect, whose wanderings after light so often plunge it into deeper gloom; and from the moral debasement, whose pleasures are vices and crimes. It has surrounded us with a profusion of comforts and blessings, of which the most poetic imagination would never otherwise have conceived. It has found, not mythologic goddesses, but gigantic and tireless laborers in every stream; not evil and vindictive spirits, but beneficent and helping ones, in all the elements; and, by a profounder alchemy than the schoolmen ever dreamed of, it transmutes quarries and ice-fields into gold. It has given cunning to the hand of the mechanic, keenness to the artisan's eye, and made a sterile soil grow grateful beneath the skill of the husbandman. Hence, the absence of poverty among our native population; hence, a competency for the whole people, the means for mental and moral improvement, and for giving embellishment and dignity to life, such as the world has never known before, and such as nowhere else can be found upon the face of the earth.

THE POWER OF KNOWLEDGE.

How divinely wise were our Pilgrim Fathers, when they foresaw, that if they could give knowledge and virtue to their children, they gave them all things. Wonder and admiration seize us, as we reflect upon the vastness of the results which their wisdom wrought out from the scantiest of resources. They have taught us the great lesson, how the fiercest elements obey, and how the most obdurate and intractable of nature's substances bend and melt before the power of knowledge, and the fervors of a saintly heroism. Their deeds have taught us, not only that the race is not to the swift, nor the battle to the strong; but they have taught us, that the swiftness which shall win the honors of the goal, and the strength that shall triumph in the strife, are to be found in the soul, and not in the limbs of man. But though, to this untitled, yet noblest ancestry, we are bound to pay the homage of our gratitude, and to accept their benefactions with a filial love; yet neither the complacency of enjoyment, nor that of retrospection, is the frame of mind that best befits us. *We have our futurity, as they had theirs;*—a futurity rapidly hastening upon us,—a futurity, now fluid,—ready, as clay in the hands of the potter, to be moulded into every form of beauty and excellence; but, so soon as it reaches our hands, so soon as it receives the impress of our plastic touch, whether this touch be for good or for evil, it is to be struck into the adamant of the unchanging and unchangeable Past. Into whose form and likeness shall we fashion this flowing futurity? Of Mammon? of Moloch? or of Jesus?

IMMENSE IMPORTANCE OF PRESERVING FREE SCHOOLS IN VIEW OF THE FUTURE GROWTH OF POPULATION.

Clear, and more clear, out of the dimness of coming time, emerge, to the vision of faith, the myriad hosts of the generations that shall succeed us. These generations are to stand in our places, to be called by our names, and to accept the heritage of joy or of woe, which we shall bequeath them. Shall they look back upon us, with veneration for our wisdom and beneficent forecast, or with shame at our selfishness and degeneracy? Our ancestors were noble examples to us; shall we be ignoble examples to our posterity? They gave from their penury, and shall we withhold from our abundance? Let us not dishonor our lineage. Let us remember that generosity is not to be measured by the largeness of the sum which a man may give, but by the smallness of the sum which remains to him after his gift. Let us remember that the fortunes of our children, and of their descendants, hang upon our fidelity, just as our fortunes were suspended upon the fidelity of our fathers. Deeds survive the doers. In the highest and most philosophic sense, the asserted brevity of human life is a fiction. The act remains, though the hand that wrought it may have perished. And when our spirits shall have gone to their account, and the dust of our bodies shall be blown about by the winds, or mingled with the waves, the force which our life shall have impressed upon the machinery of things will continue its momentum, and work out its destiny upon the character and happiness of our descendants.

THE IMPORTANCE OF THE AMERICAN EXPERIMENT OF FREE GOVERNMENT.

But not the fortunes of our children alone, or of our children's children, are dependent upon us. The influences of our conduct extend outward in space, as well as onward in time. We are part of a mighty nation, which has just embarked upon the grandest exderiment ever yet attempted upon earth; — the experiment of the capacity of mankind for the wise and righteous government of themselves. Fearful are the issues which hang upon the trial; but few and simple the conditions that predestine its result. The firmament. though pillared upon rottenness, shall be upheld; and the light of day shall continue to revisit the earth, though the sun be blotted out, sooner than a Republic shall stand which has not Knowledge and Virtue for its foundations; Yet are we not braving, the result of this experiment, in impious defiance of the conditions on which Heaven has decreed that the trial shall turn? Within a brief period of time, our population has spread itself westward from the Atlantic, through more than twenty degrees of longitude. It has erected thirty States, and given to each a republican frame of government. Yet, in more than one-half of these States, no provision worthy of the name, is made for replenishing the common mind with knowledge, or for training the common heart to virtue. Surely, to the people of these States, a different mental and moral culture must come speedily, or it will come too late; and the sower who would scatter the elements of knowledge and virtue amongst them must press forward with gigantic strides, and cast his seed with a gigantic arm.

When one reflects that it is only forty years since the following description of the condition of the trans-Mississippi region was written, a vivid realization is felt of the rapidity and immensity of growth that has thus peopled the vast Northwest, building up thriving towns and cities as quickly and deftly as the nomad nations pitch their tents at evening; that has linked the oceans with roads of iron, and evoked a glorious sisterhood of States from the then wilderness, trodden alone by the Indian, the buffalo, and the fiercer animals. The problems he foresaw are already pressing upon this generation for solution; the realization of his prophecies add emphasis to his warnings:

Nor is this all. Beyond our western frontier, another and a wider realm spreads out, as yet unorganized into governments, and uninhabited by civilized man. The western is still broader than the eastern expanse. It stretches through thirty degrees of longitude,— one-twelfth part of the circumference of the globe. Half the population of continental Europe might be transplanted to it, find subsistence on it, and leave room to spare. It is now a waste, more dreary than desolation itself; for it is filled only with savage life. Yet soon will every rood of its surface be explored by the centrifugal force of the Saxon soul, and whatever of vegetable wealth is spread upon it, or of mineral wealth is garnered beneath it, will be appropriated by the vehemence of Saxon enterprise. Shall this new empire, wider than that of the Ptolemies, and almost as extensive as that of the Cæsars, be reclaimed to humanity, to a Christian life, and a Christian history; or shall it be a receptacle where the avarice, the profligacy and the licentiousness of a corrupt civilization shall cast its criminals and breed its monsters? If it is ever to be saved from such a perdition, the Mother States of this Union,— those States where the institutions of learning and religion are now honored and cherished, must send out their hallowing influences to redeem it. And if, in the benignant Providence of God, the tree of Paradise is ever to be planted and to flourish in this new realm; if its branches are to spread, and its leaves to be scattered for the healing of the people; will not the heart of every true son of Massachusetts palpitate with desire,— not a low and vain-glorious ambition, but such a high and holy aspiration as angels might feel,— that her name may be engraved upon its youthful trunk, there to deepen and expand with its immortal growth?

HORACE MANN,
Secretary of the Board of Education.

WEST NEWTON, *Nov* 24, 1848.

III.

THE NORMAL SCHOOL IN THE UNITED STATES.

By Rev. A. D. Mayo.

The following extracts from a recent article by a leading educator * are here given because of the tribute paid to Horace Mann, and the high place in American Educational history therein accorded to him. The article is based on the "Brief Account of the work of the Board of Education since its establishment in 1837," which is, in fact, a concise history of the common schools of Massachusetts for the past half century, by the Hon. J. W. Dickinson, Secretary of the State Board of Education. This forms a part of the Secretary's Report to the Board for the year 1885–86.† This history is a most valuable and interesting summary of the development of the free common school as created by Horace Mann.

The incidental statements, in Mr. Mayo's article, as to the complex influences which go to develop and shape the self-governing character of the American citizen; the characterization of the spirit of the new education, and the estimate of the importance of the work of normal schools, are, also, all in keeping with the topics treated in this Report.

So much space has been given in this Appendix to the words of Horace Mann, that the author of this Report is glad of this opportunity of presenting, in the words of a writer of to-day, the evidence that he is by no means singular in his estimate of the important and far-reaching influence of the efforts of the great pioneer of American common school education. The fact that the published works of Mr. Mann, whose warning words were never of more importance than now, are not readily accessible to the present generation, justifies the space given to them in this Appendix.

After a merited tribute to the admirable historical summary given by Dr. Dickinson, Mr. Mayo says:

> There is no question that, up to the appointment of Horace Mann as Secretary of the new State Board of Education in 1837, the common schools of Massachusetts were the best in the Union; indeed, beyond New England it could hardly be said that the free common school system existed. The reports of Mr. Mann during the twelve years of his administration were the first revelation to the country of the real condition of public instruction in the most favored educational Commonwealth. * * * Supervision was wholly by school committees and very unreliable; and the early reports from all portions of the State in 1838 speak of "the general apathy manifested by all towards popular education." In the language of the Secretary: "the forms of school government were demoralizing;" "the schools did not pretend to teach in the true sense;" and "the great mass of public school teachers had no real preparation for their work."

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* "The Normal School in the United States," by A. D. Mayo. See "Education," for December, 1887. "Education" is a monthly magazine, published in Boston, Massachusetts, William A. Mowry, Editor.

† "Fiftieth Annual Report of the Board of Education: together with the Fiftieth Annual Report of the Secretary of the Board 1885–86. January, 1887. Boston: Wright & Potter Printing Co., State Printers, 18 Post-Office Square, 1887."

Of course there was a fair amount of good schooling in that day. Native teaching talent always comes to the front and may even be stimulated by a condition such as is here described. * * * . Poor as the old common schools of Massachusetts were, the people were largely of the most vigorous, independent, and intelligent stock in Christendom. The New England town was itself one of the most powerful training schools, in certain ways; both for stimulating the good and suppressing the evil element of population. But it is only by imputing to the school system these powerful agencies that environed it that one can regard it with much satisfaction. In fact, the best thing about the New England system of half a century ago is that it turned out a superior body of people who, under the lead of Horace Mann, inaugurated the great decisive movement which lifted the old-time district school through the long and bitter conflict of two generations up to the American free school system of to-day.

HORACE MANN AND THOMAS JEFFERSON.

It was out of this condition of affairs that Horace Mann led the way to the organization of the present American common school. Horace Mann, with Thomas Jefferson, almost monopolizes the double honor of schoolman and statesman in our country. With the sharp, practical, broad, and passionate instinct of the progressive masses of our older North, he saw with indignation how the mighty enterprise of schooling the whole people was sacrificed, as it always is, when any exclusive cultivated class assumes an infallible right as educator. He was the author of the graded school system, as Jefferson of its crowning institution, the free, unsectarian, State university, with its elective curriculum. His writings are still the people's hand-book of public education. His later work, at Antioch College, Ohio, was only second in importance to his great campaign in the East. The time had hardly come for even the thorough discussion of the natural methods of instruction, which now engrosses the educational public. Mr. Mann used to say that "he was always hunting for an almanac with more days in it than the calendar year;" and he longed for the time to work out his larger view of methods of instruction. This day never came, and he died as he had lived, the statesman of the new educational life of the republic.

IMPORTANCE OF THE ESTABLISHMENT OF A NORMAL SCHOOL.

But his establishment of the normal school in New England, including the work of Page at Albany, N. Y., was a long step forward. Set up on Lexington Green, July 4, 1839, its foundation ranks with the other great event, more than half a century before, when "the embattled farmers * * * fired the shot heard round the world." This little group of normal schools insisted that the teacher needs more than the ordinary academical or university culture.

* * * Horace Mann struck the key-note of progress when he placed "Father Pierce," Samuel J. May, and Tillinghast at the head of his new normal schools. From that day the State normals of New England have been under the control of a teaching faculty whose labors form one of the most instructive chapters in the history of American education.

These early normals were also the first public schools in New England, almost the first American schools, that offered superior young women an opportunity corresponding to the college education of young men. Their earliest graduates included the ablest group of young women teachers that New England had produced. * * *

But it was not reserved for New England to carry off all the honors of the new normal movement in education. Her eminence is sufficiently assured while walking abreast of other States in the later phase of the national common school. It was given to New York and the West to push forward the work by the establishment of the final type of the American State normal and city training school.

THE NEW ENGLAND CHARACTER AS DEVELOPED IN THE WEST.

Nowhere has the New England character developed its broadest and finest qualities in a more striking degree than through the vast region from the Hudson River to the Pacific Coast, so largely colonized by its progressive youth. Before 1860 the common school had been established through this entire realm, chiefly on the New England pattern, largely worked by teachers from the East. The great war brought the new Northwest to the front with its prodigious development of executive power and mighty ambition for leadership in national affairs. A people so awakened naturally demanded a reorganization of the common school on broader foundations and with higher aims than the old district school of New England. A new institution was needed to fashion the fit teacher for the new public school.

This call was heard in the little border city of Oswego, N. Y., twenty-five years ago. Joseph Cabell, of Virginia, half a century before, had visited Pestalozzi and told the wondrous story to the unwilling ears of his neighbors. Mann and Stow and Barnard, with their followers, had reported the superior methods of instruction observed in Europe, in a literature that still remains unrivaled. An increasing number of progressive school masters were working in this direction everywhere. In 1862 Edward A. Sheldon established a small training school for primary teachers at Oswego, N. Y. Not satisfied with his success, he brought over from England Miss Jones, an accomplished expert, to give the results of the best British adaptation of the Pestalozzian methods. Out of that experiment was developed the famous State normal school at Oswego, N. Y., which, during the past quarter of a century, has probably been more influential in its leadership of the new educational movement beyond the Hudson than any other single agency. Indeed, from this modest and earnest beginning, we may date a powerful impetus in the present remarkable growth of the State normal and the city training school and the establishment of a chair of pedagogics in the State university through the vast realm beyond the Berkshire Hills.

SIGNIFICANCE OF THE NEW DEPARTURE.

The first characteristic of the Oswego movement was its point of departure. Instead of beginning as a revised academy and working towards the child by improved academical methods, it placed a group of young graduates of a free high school in a real working relation to a school-house full of children. The difference is radical. The old education approaches the youth as a lump of clay, to be moulded by an infallible teacher, originally the priest of an infallible church. The new education begins by joining hands with the good mother, studying the child and working in faith, humility, and hope for its development according to the divine plan as learned in life in this world; God's infant school. * * *

FOREIGN INSTITUTIONS LIKE INDIVIDUAL IMMIGRANTS MUST BE NATURALIZED, TO SUCCEED IN THE UNITED STATES.

A fatal blunder of many eminent scholars and pedagogues is the attempt to transplant the British and Continental organization and method of instruction unchanged to our country. But the American common school is only one agency of American republican society; not a machine to train a nation's youth according to distinctions of class and faith for a fixed position in life; but a people's university, ranging from the kindergarten to the state college, in league with the free library, the press, and public speech, in a complete scheme for training a generation for self-government. It is no man's system, but, like the government, the work of the whole people; and the misguided leaders of the present war on the common school will, by-and-by, touch the quick, and be reminded that in no American institution is garnered up so much of the best mind and heart of the people. While, therefore, a considerable class of eminent educators, of native and foreign birth, have labored at the discouraging task of reproducing the old world forms, from "the genuine kindergarten" up, the normal school leaders have grasped the idea that the best thought and practice of Europe must become incarnate in American methods, if the true idea of national instruction is to be realized.

And it left all doors and windows wide open, invited criticism and suggestion, "proving first all things and holding fast to that which is good."

The heart of the new education is its reverence for the true scientific spirit, which works in freedom through observation of facts, testing of methods, and joyful acceptance of demonstrated results. It rises above the chronic weakness of the regulation pedagogue; does not fear rivals or devour its own disciples, expecting that every generation will grow wiser by outgrowing its mistakes. At the same time it remembers that the child is the great conservative; that habit is slow, and the most difficult thing on earth is to change hereditary tendency and liberate and guide the least little one in the upward way."

IV.

THE COMMON SCHOOLS OF AMERICA THE HOPE OF THE REPUBLIC.

[From an address by Hon. Chauncey M. Depew, LL. D.]

The references that have been made throughout this Report to the existing conditions of the country; to the new problems which, by reason of indiscriminate immigration and rapidly changing industrial circumstances, now confront American educators and statesmen; the position taken, that the free common schools are the bulwarks of American liberty, as well as the sources of material prosperity, and must be so conformed to changing needs as to justify themselves, and to entrench them so securely in the hearts of the people, that all efforts to antagonize them shall prove futile; make the following reference to these schools by the Honorable Chauncey M. Depew, in the noble address spoken by him at Chicago, February 22, 1888, in commemoration of Washington, peculiarly apposite.

In common with the illustrious statesmen and leaders of the past, and in full accord with the utterances of the long line of American Presidents, Mr. Depew looks to the schools of the people, for the safe *solution* of these problems.

In his opening sentences the speaker thus outlines the scope of his address:

> We are an industrial people, and the great question with us is, How do institutions best serve our needs? We are not so wholly materialistic that we cannot deeply feel the sentiments of liberty and nationality, and yet both form the broad foundation upon which we must build for permanence. No intelligent consideration of the questions affecting our present and future is possible without an understanding of the successive stages in the development of our system.

After passing in brief review the successive eras from the days of Washington to the present time, he pictures the habitual dependence of the European citizen upon his government as contrasted with the independence of the self-reliant American, and warns his countrymen against the dangers to republican institutions of such a surrender of individuality; since this habit of looking for all things to the government constitutes "the underlying spirit of despotism." He then says:

> The needs of the present and the preparation for the future require that all citizens shall be Americans. Healthy patriotism can be sentimental, but it must be intelligent. Said the philosopher: "Let me write the songs of a people and I care not who make their laws." That day has passed, never to return. Steam and electricity have broken the spell. Revolutions can no longer be conjured nor ancient rights defended by melody. The marching music of the columns of liberty must be, not the Marseillaise or the National anthem, but the high and harmonious teachings of the common school.

AMERICANISM THE FOE OF ANARCHY.

> There is an intellectual awakening in this land, and its stimulants affect the well-being and safety of life and property and law. The trades-union is a debating club; a session of the Knights a congress of labor: the Sabbath picnic is a school, not of divinity but of theology. The questions discussed are vital in their proper

solution to the State, society, and the church. The churches of all creeds and men of every faith are doing magnificent work in the conservation of the virtues and habits of liberty, but the preacher has lost his political influence and the priest much of the power he possessed in the more primitive period.

The teachers of disintegration, destruction and infidelity possess the activity of propagandists and the self-sacrificing spirit of martyrs. Their field is ignorance, their recruiting sergeants distress. Only faith grounded in knowledge can meet these dangerous, ceaseless and corrupting influences. In the midst of these perils, the sheet-anchor of the Ship of State is the common school. Before the era of great cities and crowded populations, when it was easy both to earn a living and to gain a competence, when the best influences of every settlement reached every part of it, the State met every requirement in furnishing free a fair business education. But now by far the larger part of our people have no common ancestry in the Revolutionary War, and a generation has come to its majority which knows little of the Rebellion and its results. Colonists from Europe form communities both in the city and country where they retain the language, customs and traditions of the Fatherland, and live and die in the belief that the Government is their enemy. To meet these conditions, the State provides an education that does not educate, and the prison and the poorhouse.

Ignorance judges the invisible by the visible. Turn on the lights! Teach first and last Americanism! Let no youth leave the school without being thoroughly grounded in the history, the principles and the incalculable blessings of American Liberty. Let the boys be the trained soldiers of constitutional freedom, and the girls the intelligent mothers of freemen, and the sons of the Anarchists will become the bulwarks of the law.

In a later utterance (July, 1889), Mr. Depew, speaking of the educational value of the observance of the Fourth of July in disseminating and enhancing the sentiment of patriotism, after renewed reference to the lack, on the part of so many citizens, of any hereditary connection with the heroes of the Revolution, or even with those later patriots who, under Lincoln, made such strenuous efforts to save the Republic, says:

We must, therefore, supplement by education the well-nigh irreparable loss of traditions.

Nations can not develop upon rising lines without patriotism. With institutions and governments perpetuity is impossible unless they are sustained by intelligent patriotism. Liberty and law is the ark of our covenant. The law is the spear and shield of our liberty. It makes clear the rights of the citizen and protects him in their enjoyment. It recognizes neither rank, nor class, nor combinations, nor power. It enforces upon the greatest, as well as the humblest, the operation of the immortal principle of the Declaration of Independence—"that all men are created free and equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty, and the pursuit of happiness." Whenever the celestial light of this glorious idea irradiates the soul of the fugitive from the tyranny of monarchs and the oppressions of caste, he becomes regenerated and disenthralled. Bitterness against the Government, hatred of power, and vindictiveness toward society are expelled from his mind. The wild and destructive theories of anarchy and communism are transformed into fervid loyalty and solid satisfaction for the institutions of a people, of whom he is proud to be one, a sovereign among sovereigns, a peer among peers, who govern themselves. Symbolism is the greatest of teachers. The stars and stripes flying from mast-head and liberty-pole, from the home window and the church-spire, and greeted, as the first rays of the rising sun on the Fourth of July play lovingly around its folds, with joyful peals from the belfries and the thunder of cannon from the hills, is a liberal education in the meaning of our freedom to millions, and a refreshing bath of liberty for us all.

Old John Adams, upon the day of his death, hearing the noise of the bells and cannon, and being informed that it was Independence Day, expended his last strength in the expiring cry, "Independence forever!" In his time liberty could not survive independence. Webster devoted his matchless powers to the defence of the Union. For his period, liberty and union were inseparable. Lincoln died that the Nation might live. For his era, liberty and nationality were one and indivisible. For our age, and the ever-impending future, the preservation of our glorious inheritance, its increase and transmission to coming generations, depend upon the equal life and resistless power of liberty and law.

V.

"COMMON SCHOOLS."

By Rev. Horace Bushnell, D. D.

The following quotations from a notable address delivered in New England some thirty-five years ago, by one of the great leaders of thought in his generation,—the late Horace Bushnell, D. D., of Hartford, Connecticut,—are here given by reason of the clear statements made, and convincing arguments presented, in favor of the Common Schools of America.

However the purpose was at that time disguised, there has been, in recent years, on the part of our Catholic fellow-citizens, no concealment of the fact of their hostility to the free common schools of America; nor of their determination that the children of Catholics should not attend these schools, but that they should be taught in parish schools, under the direct charge and supervision of their priests. Other sectarians have, from time to time, among them Presbyterians and Episcopalians, made various efforts to have *their* children likewise taught in the church schools of their several sects. The charge of "Godless schools" and the charge of "schools teaching superstitions," have been urged against the Common Schools of the State, by Religionists on the one hand, and by Scientists and Infidels, on the other.

While the plea, that parents whose conscience will not suffer them to send their children to these public schools,—because of such religious teaching, or want of religious teaching, as the case may be,—suffer hardship in being forced to pay school taxes and then in having to provide private tuition for their children,—which, at first sight, seems plausible,—is forever answered by the clear statements of this great logician.

Space is wanting to quote the whole of this address, which is most remarkable for its loveable spirit of Christian toleration; its suggestion that in America, as in Holland and in Ireland, a *modus vivendi*, could be found, by which the children of Catholic and of Protestant parents could be taught in the same schools, without offending the religious prejudices, or impairing the beliefs of either.

It is, however, mainly for its clear exposition of the value of the public schools in the education of the children in the practice, as well as theory, of true American Republicanism, that I have thought these extracts worthy of insertion here. The dangers arising from an ever-increasing population of foreigners, have multiplied many fold since these timely words of warning were first spoken. More imperative than any training in industrial or artistic skill, is the need that the children who are to rule in these United States should be fitted to be good citizens of the American Republic. It is no question of Catholicism or Protestantism, of Religionist or Infidel, of Gentile or Mormon, but only of the life or death of the Republic. The topic of Dr. Bushnell's discourse, delivered on Fast Day, March 25, 1853, was "Common Schools."* He said :

> * * * We have said to the strangers from Germany, France, Switzerland, Norway, Ireland, and indeed of every land: Come and be Americans with us, you and your children; and whatsoever right or benefit we have, in our free institutions and our vast and fertile domain, shall be yours.
>
> Thus invited, thus admitted to an equal footing with us, they are not content, but are just now returning our generosity by insisting that we must excuse them and their children from being wholly and properly American.
>
> * * * They accept the common rights of the law, the common powers of voting, the common terms of property, a common privilege in the new lands and the mines of gold, but when they come to the matter of common schools, they will not be common with us there; they require of us, instead, either to give up our common school, or else, which in fact amounts to the same thing, to hand over their proportions of the public money and let them use it for such kind of schools as they happen to like best; ecclesiastical schools, whether German, French, or Irish; any kind of schools but such as are American and will make Americans of their children. * * *.
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> In one view the question is wholly a religious question; in another it is more immediately a civil or political question. And yet the lines cross each other in so many ways, that any proper discussion of the topic must cover both aspects or departments, the religious and the political. I take up the question at this early period, before it has become, in any sense a party question, that I may have the advantage of greater freedom, and that I may suffer no imputation of a party bias to detain me from saying anything which pertains to a complete view of the subject. * * *. I propose, therefore, now to anticipate, as it were, the pressure of this great subject, and discharge myself, once for all, of my whole duty concerning it; and I hope to speak of it under that sense of responsibility, as well as in that freedom from prejudice, which one of the greatest and most serious of all American subjects requires. I wish I might also speak in a manner to exclude any narrow and partial or sectarian views of it, such as time and the further consideration of years might induce a wish to qualify or amend.
>
> I will now undertake to say that our Catholic friends have, in no case, any just reason for uneasiness or complaint. * * *
>
> CHANGES IN THE ATTITUDE OF THE STATE TOWARDS RELIGION AND EDUCATION.
>
> Meantime the subject itself is one of some inherent difficulty, and cannot be expected to settle itself upon its right foundation, without some delay or some agitation, more or less protracted, of its opposing interests and reasons. We began our history in all but the single colony of Baltimore, as Protestant communities; and in those especially of New England, we have had the common school as a fundamental institution from the first,—in our view a Protestant institution,—associated with all our religious convictions, opinions, and the public sentiment of our Protestant society. We are still, as Americans, a Protestant people, and many are entirely ignorant as yet of the fact that we are not still Protestant States also, as at the first; Protestant, that is, in our civil order and the political fabric of our government. And yet we very plainly are not. We have made a great transition; made it silently and imperceptibly, and scarcely know as yet that it is made. Occupied wholly with a historic view of the case, considering how the country and its institutions are historically speaking ours; the liberality and kindness we have shown to those who have come more recently to join us, and are even now heard speaking in a foreign accent among us; the asylum we have generously opened for them and their children; the immense political trust we have committed to them, in setting them on a common footing, as voters, with ourselves; and that now we offer to give a free education to their children, at the public expense, or by a tax on all the property of the State,—considering all this, and that we and our fathers are Protestants, it seems to be quite natural and right, or even a matter of course, that our common schools should remain Protestant and retain their ancient footing undisturbed.
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> But we shall find, on a second consideration, that we have really agreed for something different, and that now we have none to complain of but ourselves, if we have engaged for more than it is altogether pleasant to yield. Our engagement, in the

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* See Volume III, of "Literary Varieties," in the collected works of Dr Bushnell, published by Charles Scribner's Sons, New York, 1881. This volume has the title "Building Eras."

large view of it, is to make the state or political order a platform of equal right to all sects and denominations of Christians. We have slid off, imperceptibly, from the old Puritan, upon an American basis, and have undertaken to inaugurate a form of political order that holds no formal church connection. The properly Puritan common school is already quite gone by; the intermixture of Methodists, Quakers, Unitarians, Episcopalians, and diverse other names of Christians called Protestants, has burst the capsule of Puritanism, and as far as the schools are concerned it is quite passed away; even the Westminster Catechism is gone by, to be taught in the schools no more. In precisely the same manner, have we undertaken also to loosen the bonds of Protestantism in the schools, when the time demanding it arrives. To this we are mortgaged by our great American doctrine itself, and there is no way to escape the obligation but to renounce the doctrine, and resume, if we can, the forms and lost prerogatives of a State religion.

COMMON SCHOOLS, A PERMANENT INSTITUTION.

But there is one thing, and a very great thing, that we have not lost, nor agreed to yield; viz., *Common Schools*. Here we may take our stand, and upon this, we may insist as being a great American institution; one that has its beginnings with our history itself; one that is inseparably joined to the fortunes of the republic; and one that can never wax old, or be discontinued in its rights and reasons, till the pillars of the State are themselves cloven down forever. We cannot have Puritan common schools; these are gone already. We cannot have Protestant common schools, or those which are distinctively so. But we can have common schools, and these we must agree to have and maintain to the last or latest day of our liberties. These are American, as our liberties themselves are American; and whoever requires of us, whether directly or by implication, to give them up, requires what is more than our bond promises, and what is, in fact, a real affront to our name and birthright as a people?

COMMON SCHOOLS DEFINED.

I mean, of course, by common schools, when I thus speak, schools for the children of all classes, sects, and denominations of the people; so far perfected in their range of culture and mental and moral discipline, that it shall be the interest of all to attend, as being the best schools which can be found; clear too, of any such objections as may furnish a just ground of offence to the conscience or the religious scruples of any Christian body of our people. I mean, too, schools that are established by the public law of the State, supported at the public expense, organized and superintended by public authority. Of course it is implied that the schools shall be under laws that are general, in the same way as the laws of roads, records, and military service; that no distribution shall be made, in a way of exception, to schools that are private, ecclesiastical or parochial; that whatever accommodations are made to different forms of religion, shall be so made as to be equally available to all; that the right of separate religious instruction, the supervision, the choice of teachers, the selection of books shall be provided for under fixed conditions, and so as to maintain the fixed rule of majorities, in all questions left for the decision of districts. The schools, in other words, shall be common, in just the same sense that all the laws are common, so that the experience of families and of children under them shall be an experience of the great republican rule of majorities; an exercise for majorities of obedience to fixed statutes, and of moderation and impartial respect to the rights and feelings of minorities: and exercise for minorities of patience and of loyal assent to the will of majorities; a schooling, in that manner, which begins at the earliest moment possible, in the rules of American law and the duties of an American citizen.

COMMON SCHOOLS A NECESSITY, AND AN INTEGRAL PART OF THE STATE ITSELF.

And this, I undertake to say, is the institution which we are not for any reason to surrender, but to hold fast as being a necessary and fixed element of the public order, one without which our American laws and liberties are scarcely American longer; or, if we call them by that name, have no ground of longer security and consolidated public unity.

In the first place, it will be found, if we closely inspect our institutions, that, the common school is, in fact, an integral part of the civil order. It is no eleemosynary institution, erected outside of the State, but is itself a part of the public law, as truly so as the legislatures and judicial courts. The school-houses are a public property, the district committees are civil officers, the teachers are as truly functionaries of the law as the constables, prison-keepers, inspectors and coroners. We perceive then, if we understand the question rightly, that an application against common schools, is so far an application for the dismemberment and reorganization of the civil order of the State. Certain religionists appear, in the name of religion, demanding that the State shall be otherwise constructed. Or if it be said that they do not ask for the discontinuance of the common schools, but only to have a part of the funds bestowed upon their ecclesiastical schools, the case is not mended but rather made worse by the qualification; for in that view they are asking that a part of the funds which belong to the civil organization shall be paid over to their religion, or to the *imperium in imperio* which their religion so far substitutes for the civil order. It is as if they were to ask that the health-wardens should so far be substituted by their church-wardens, or the coroner's inquest by their confessional, and that the State, acknowledging their right to the substitution demanded, should fee the church-wardens and confessors in their behalf. If an application that infringes on the civil polity of our States, in a manner so odious, is to be heard, the civil order may as well be disbanded, and the people given over to their ecclesiastics, to be ruled by them in as many clans of religion as they see fit to make. Are we ready, as Americans, to yield our institutions up in this manner, or to make them paymasters to a sect who will so far dismember their integrity?

BENEFICENT INFLUENCE OF COMMON SCHOOLS IN A REPUBLIC.

This great institution too, of common schools, is not only a part of the State, but is imperiously wanted as such, for the common training of so many classes and conditions of people. There needs to be some place where, in early childhood, they may be brought together and made acquainted with each other; thus, to wear away the sense of distance, otherwise certain to become an established animosity of orders; to form friendships; to be exercised together on a common footing of ingenuous rivalry; the children of the rich to feel the power and do honor to the struggles of merit in the lowly, when it rises above them; the children of the poor to learn the force of merit and feel the benign encouragement yielded by its blameless victories. Indeed, no child can be said to be well-trained, especially no male child, who has not met the people as they are, above him or below, in the seatings, plays, and studies of the common school. Without this he can never be a fully qualified citizen, or prepared to act his part wisely as a citizen. Confined to a select school, where only the children of wealth and distinction are gathered, he will not know the merit there is in the real virtues of the poor, or the power that slumbers in their talent. He will take his better dress as a token of his better quality, look down upon the children of the lowly with an educated contempt, prepare to take on lofty airs of confidence and presumption afterward; finally, to make the discovery when it is too late, that poverty has been the sturdy nurse of talent in some unhonored youth who comes up to affront him by an equal, or mortify and crush him by an overmastering, force. So also the children of the poor and lowly, if they should be privately educated in some inferior degree by the honest and faithful exertion of their parents; secreted, as it were, in some back alley or obscure corner of the town, will either grow up in a fierce, inbred hatred of the wealthier classes, or else in a mind cowed by undue modesty. as being of another and inferior quality, unable therefore to fight the great battle of life hopefully, and counting it a kind of presumption to think that they can force their way upward, even by merit itself.

Without common schools, the disadvantage falls both ways in about equal degrees, and the disadvantage that accrues to the State, in the loss of so much character and so many cross ties of mutual respect and generous appreciation, the embittering so fatally of all outward distinctions, and the propagation of so many misunderstandings, righted only by the immense public mischiefs that follow,—this, I say, is greater even than the disadvantages accruing to the classes themselves; a disadvantage that weakens immensely the security of the State and even of its liberties. Indeed, I seriously doubt whether any system of popular government can stand the shock, for any length of time, of that fierce animosity that is certain to be gendered where the children are trained up wholly in their classes, and never brought together to feel, understand, appreciate, and respect each other. on the common footing of merit and of native talent, in a common school. Falling back thus on the test of merit and of native force, at an early period of life, moderates immensely their valuation of mere conventionalities and of the accidents of fortune, and puts them in a way of deference that is genuine as well as necessary to their common peace in the State. Common schools are nurseries thus of a free republic; private schools, of factions, cabals, agrarian laws, and contests of force. Therefore, I say, we must have common schools; they are American, indispensable to our American institutions, and must not be yielded for any consideration smaller than the price of our liberties.

He then proceeds to show the inevitable feelings of antagonism that would result if the children were all taught in separate sectarian schools:

DANGERS INCIDENT TO SECTARIAN SCHOOLS.

No bitterness is so bitter, no seed of faction so rank, no division so irreconcilable, as that which grows out of religious distinctions sharpened to religious animosities, and softened by no terms of intercourse; the more bitter when it begins with childhood; and yet more bitter when it is exasperated also by distinctions of property and social life that correspond; and yet more bitter still, when it is aggravated also by distinctions of stock or nation.

In this latter view, the withdrawing of our Catholic children from the common schools, unless for some real breach upon their religion, and the distribution demanded of public moneys to them in schools apart by themselves, is a bitter cruelty to the children and a very unjust affront to our institutions. We bid them welcome, as they come, and open to their free possession all the rights of our American citizenship. They, in return, forbid their children to be Americans, pen them as foreigners to keep them so, and train them up in the speech of Ashdod among us. And then, to complete the affront, they come to our legislatures demanding it as their right to share in funds collected by a taxing of the whole people, and to have these funds applied to the purpose of keeping their children from being Americans.

Our only answer to such demands is: No! take your place with us in our common schools, and consent to be Americans, or else go back to Turkey, where Mohammedans, Greeks, Armenians, Jews are walled up by the laws themselves, forbidding them ever to pass over or to change their superstitions; there to take your chances of liberty, such as a people are capable of when they are trained up, as regards each other, to be foreigners for all coming time in blood and religion. I said, go back to Turkey: that is unnecessary. If we do not soon prepare a state of Turkish order and felicity here, by separating and folding our children thus, in the stringent limits of religious non-acquaintance and consequent animosity, it will be because the laws of human nature and society have failed.

Besides, there are other consequences of such a breach upon the common school system, implied in yielding this demand, which are not to be suffered. A very great part of the children, thus educated, will have very inferior advantages. They will be shut up in schools that do not teach them what, as Americans, they most of all need to know, the political geography and political history of the world, the rights of humanity, the struggles by which those rights are vindicated and the glorious rewards of liberty and social advancement that follow. They will be instructed mainly into the foreign prejudices and superstitions of their fathers, and the State, which proposes to be clear of all sectarian affinities in religion, will pay the bills!

It will also be demanded, next, that the State shall hold the purse for the followers of Tom Paine and all other infidels, discharging the bills of schools where Paine's Age of Reason, or the Mormon Bible, or Davis's Revelations are the reading books of the children. * * * . This result will be further expedited by the fact that many children, now in our public schools, will be gathered into schools of an atheistic or half pagan character, where they will be educated in a contempt of all order and decency, to be leaders of the ignorance and brutality supplied by the uneducated. How different the picture from that which is now presented by our beautiful system of common schools,—every child provided with a good school, all classes and conditions brought together on an equal footing of respect and merit, the State their foster-mother, all property a willing and glad contributor for their outfit in life and their success in the ways of intelligence and virtue! * * *

He then suggests a plan of teaching the common elements of morality and religion on which Catholic and Protestant churches could unite, illustrating it by quoting from the school cards prepared for the use of schools in Ireland, by Archbishop Whately, and approved by the Catholic Archbishop, and says:

Out of these and other elements like these it is not difficult to construct, by agreement, such a plan as will be Christian, and will not infringe, in the least, upon the tenets of either party, the Protestant or the Catholic. It has been done in Holland and, where it was much more difficult, in Ireland. The British government, undertaking at last, in good faith, to construct a plan of national education for Ireland, appointed Archbishop Whately and the Catholic Archbishop of Dublin with five others, one a Presbyterian and one a Unitarian, to be a board or committee of superintendence. They agreed upon a selection of reading lessons from both translations of the Scriptures, and, by means of a system of restrictions and qualifications carefully arranged, providing for distinct methods and times of religious instruction, they were able to construct a union, not godless or negative, but thoroughly Christian in its character, and so to draw as many as 500,000 of the children into the public schools; conferring thus upon the poor, neglected, and hitherto oppressed Irish, greater benefits than they have before received from any and all public measures since the Conquest.

He comes to the final immovable conclusions that the Common Schools of America must be sustained at all hazards, and that, if people voluntarily keep their children from them, they suffer no hardship which the State is, in any manner, called on to recognize.

I do then take the ground, and upon this I insist, as the true American ground, that we are to have common schools, and never to give them up for any purpose, or in obedience to any demand whatever; never to give them up, either by formal surrender, or by implication, as by a distribution of moneys to ecclesiastical and sectarian schools. The State can not distribute funds, in this manner, without renouncing even a first principle of our American institutions, and becoming a supporter of a sect in religion. It may as well support the priests of a church, as support the schools of a church, separated from other schools, for the very purpose of being subjected to the priests.

But while we are firm in this attitude and hold it as a point immovable, we must, for that very reason, be the more ready to do justice to the religious convictions of all parties or sects, and to yield them such concessions, or enter into such arrangements as will accommodate their peculiar principles and clear them of any infringement.

But it will be objected by some, that while this should be done, provided there were anything to hope from it, there is really no hope that our concessions, or modifications will be of any avail, and therefore that they should not be made at all; for they will only so far abridge the value of our schools without yielding any recompense for the loss. Nevertheless let us offer the modifications, offer any terms of union that can be offered without a virtual destruction or renunciation of the system; and then if they are not accepted it will not be our fault. I very much fear they will not be, that an absolute separation of the Catholic children from our schools is already determined, and that no revision of the sentence can be had. Still it is much for us to take away every excuse for such a determination, and every complaint or pretext by which it is justified.

SECTARIAN SCHOOLS UTTERLY UNAMERICAN.

Then, having done it, we can take the ground explicitly and clear of all ambiguity, that they who exclude themselves are not Americans, and are not acting in their complaints or agitations on any principle that meets the tenor of our American institutions. Nothing will be more evident, and they should be made to bear the whole odium of it. If to keep their people apart from the dreaded influence of Protestant Christianity they were to buy townships of land or large quarters in our cities, to be occupied only by Catholics, walled in by their own by-laws, and allowing no Protestant family or tradesman or publican to reside in the precinct, no one to enter it without a pass; and then to come before our legislatures in petition that we will distribute moneys to support their roads, and pay their constables and gatekeepers; they would scarcely do a greater insult to our American society than they do in these separations from our common schools, and the petitions they are offering to be justified and rewarded in the separation.

But we tax them, it will be said, for the support of the common schools, and then, receiving no benefit from the tax they pay, they are obliged to tax themselves again for schools of their own. It is even so, and for one, apart from all resentment, I rejoice in it; unless they have grievances put upon them by the organization of our schools, such as justify their withdrawal. We tax the Quakers for defect of military service and bachelors who have no children, and we ought, much more, to tax the refractory un-American position taken by these Catholic strangers, after we have greeted them with so great hospitality and loaded them with so many American privileges. If now they will not enter into the great American institution, so fundamental to our very laws and liberties, let them pay for it and meas-

> ure their deserts by their dissatisfaction. If they will be foreigners still among our people, let them have remembrances that interpret their conduct to them in a way of just emphasis. * * *

He suggests that, eventually, these people will grow tired of the double tax and will then flock to the common schools.

> Of this we may be quite sure, and it ought not to be any secret to them, that their children of the coming time will at last find a way to be Americans; if not under the Pope and by the altars, then without them. * * *

He ends the long address with charitable and loving words as follows:

> Let us draw our strange friends as close to us as possible, not in any party scramble for power, but in the solemn reference of duty to the nation and to God. I cannot quite renounce the hope that a right and cordial advance on our part,— one that, duly careful to preserve the honors of Christianity, concedes everything required by our great principle of equal right to all, and as firmly refuses to yield anything so distinctively American as this noble institution, identified with our history as the blood with the growth of our bodies,— will command the respect and finally the assent of our Catholic friends themselves. And since God has better things in store even for religion than the repugnant attitudes of its professed disciples can at present permit, I would even hope that he may use an institution so far external to the church, as a means of cementing the generations to come in a closer unity and a more truly catholic peace; that, as being fellow-citizens with each other, under the State, in the ingenuous days of youth and youthful discipline, they may learn how also to be no more strangers and foreigners; but fellow-citizens with the saints and of the household of God.

VI.

THE INFLUENCE OF THE PUBLIC SCHOOLS.

*DO THE PUBLIC SCHOOLS EDUCATE CHILDREN BEYOND THE POSITION WHICH THEY MUST OCCUPY IN LIFE?**

By Wm. T. Harris, LL. D.

Why educate the child out of his sphere? Why teach him to aspire beyond the position which the vast majority must always occupy?

These are the questions which are often asked in the days of reaction, when every established institution is saluted with the challenge, "cui bono?" and not allowed to pass on until it has given the countersign "pro bono publico."

Why should we educate children in common schools, at the public expense, at all? Why should we provide opportunity for any and all children to acquire a thorough education?

We are to find the answer to this question by investigating the special conditions of society in modern civilization, and by studying the requirements of the political government under which we live. We are accustomed to accept without dissent the proposition that in a government founded on the ballot-box, universal education is the only safeguard. It is not so obvious to the questioner, however, that the social conditions of modern civilization demand the school-education of all the people. Let us, therefore, consider first this necessity of the nineteenth century before we review the requirements special to our own nation.

THE SPECIAL FEATURES AND NEEDS OF THE NINETEENTH CENTURY.

It is agreed that this age is one of productive industry. Its active principle is invention; especially mechanic invention. Every day we hear of some new discovery that harnesses a force of nature and compels it to work for man and assist in providing means of food, clothing, and shelter, or means of intercommunication and the spread of knowledge. Mind,—not the body,—is the inventive power; the directive power that can manage and use machines to advantage is mental, and not physical, skill. The growth of invention is so rapid that the increase of manufacturing power by the aid of machinery is said to double, for all the world, once in seven years. The multiplication of steam-engines, and the improvement of machinery, renders this possible. What unintelligent hand-labor is there that has any certainty of being in demand ten years hence? More than this, what trade is there that can count on using, ten years hence, just the kind of technical skill that it requires now? * * *

But we are told that all this education makes the common laborer aspire to become a professional man. He ought to be contented with the lot in which he is placed by the accident of birth. The more educated intelligence, the more invention. The more conquest over nature by invention, the more aspiration in the mind of the individual. To be a drudge ought not to satisfy any human being. Perpetual growth in knowledge and wisdom, in the realization of reason and the image of the God-like, is the vocation of man. To be discontented with the real is, therefore, the lesson of civilization.

INDOLENCE NOT A CONSEQUENCE OF EDUCATION.

"Education makes people indolent and unwilling to get their living by honest labor," we are told. It is likely that the man who has learned the magic power of science and art to subdue nature will not willingly offer himself a sacrifice to bodily wants, and accept a vocation that requires mere manual labor. He will desire a position that employs his intelligence as well as his hands; for he wishes even his labor to recognize him as something above a beast, and as possessing reason and knowledge. But all this talk about indolence as a consequence of knowledge is without a basis of fact.

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*From Report of Connecticut State Board of Education, 1882. Paper read before State Teachers' Association in New Haven, October 26-28, 1881.

The race to which we as a people belong is not an indolent race. Look at its history and study the magnitude and quality of its achievements. Why has it done all this? What would it have done if it had not had ambition, and aspiration, and much heart-hunger? Have not the Anglo-Saxon and Norman races been the most discontented of races on the planet? What contented race is there that has accomplished anything for which mankind are the better? Our civilization rewards the workman who is looking beyond the machine he is using to a better one that he has conceived in his mind. Arkwright, Whitney, Fulton, Stevenson, Morse, and Bessemer are held in high honor as heroes in the conquest over nature.

CIVIL SOCIETY LIFTS MAN'S NEEDS AND ASPIRATIONS FROM A MATERIAL TO A SPIRITUAL PLANE.

It is clear that all the bodily wants of man,— food, clothing, and shelter,— depending as they do upon the ownership of property for their satisfaction, are through this means elevated and spiritualized by the institution of society. For property is not the creation of the individual; mere possession does not suffice; it is the recognition of society that makes things become property. Civil society establishes rights of property and division of labor. Through this each man labors for his fellow-men, and depends upon their labor to supply him the articles of food, clothing, and shelter which his own labor does not produce. His bodily wants are no longer mere immediate impulses, as animal wants, but they are converted into the instruments of realizing man's spiritual or reflected being; he is forced by hunger and cold to combine with his fellow-men and to form a community in which he is to respect their recognition far more than his animal impulses and desires. Thus, too, the institution of the family lifts man above mere sexual passion, and makes him in that respect a reflected being, a rational being. Civil society is organized for the realization of man's existence as a property-owner, so that he shall be a universal or rational essence, and not a mere individual animal, dependent on his mere locality and the season of the year and his unaided might for his physical life. Through civil society each individual commands, by his own feeble efforts, the resources of the entire globe. The organization of civil society is so perfect that every day's labor of the wheat-grower affects the price of wheat all over the world. Every day's labor in the mills of Lowell or Lawrence, affects the price of cotton cloth in Australia. The day-laborer in the streets of this city commands with his meagre wages to that extent a share in the coffee of the distant Indies, the sugar of Louisiana, the tea of China, the drugs of South America, the fruits and grains, the manufactures from all sections of the country.

The fact that conscious intelligence,— directive power,— controls the property of the world, is to obvious to need re-statement. I call property a "reflected being," because it exists only through the recognition of society. Things exist, it is true, without such recognition; but things do not become property until society confirms the right of ownership. Such recognition is always an act of directive intelligence. The rights of property can be conserved only through an educated class. The higher kinds of property, such as vested rights and franchises, imply a high intelligence in the community. Again, the possibility of possession of property by all in this country adds new validity to it here and makes it more valuable. That you can alienate your real estate makes it property in a complete sense. If it is entailed it is only part property. The free possession of property, without feudal liens and tenures,— the dead hands of the past owners still clutching the symbol of their reflected being,— comes to existence only when a government of all the people, for all the people, and by all the people prevails, and when it is rendered possible through universal education. * * *

WHAT CORPORATIONS DO FOR INDIVIDUALS.

The growth of corporations is the wonder of this generation; they do what the individual never could do for himself, and yet needs to have done in order that he may gain freedom from thraldom to nature. The individual could not afford to obtain pure water from the distant hills, or establish gas-works, or own a railroad, or a telegraph, or express system. Corporations furnish him all these things. If corporations abuse their power sometimes, this is because society has not yet learned where to place legal restrictions upon them; and is another illustration of the necessity of education in the community.

Thus not only does the culture of civilization increase the alienability of property, and hence its value, but it develops into property a vast series of relations of the nature of franchises, which, in a rude, unpolished age, are mere rights of the strongest, and non-transferable to the common people. Hence property, in the highest sense, cannot exist except it be taxed for universal education. For universal education will not exist unless it is provided for by the State, and unless the State supports it wholly or in part by taxation. * * *.

COMMON SCHOOLS AN IMPERATIVE NECESSITY FOR AMERICANS.

Turning from this economical aspect of the question to the political requirements that specially concern our own people, we shall discover that we, in America, have much more to urge us to establish common-school education than this demand of the age of invention for intelligent labor. We have permitted universal suffrage, and the government of the majority. If we do not have universal education we shall all suffer for it. For we are tethered to the lowest stratum of our population, and must accept their influence in our politics. Nothing but education will ameliorate it.

The lover of his kind rejoices in the knowledge that here in America we have so organized our society that the welfare of the highest is connected, indissolubly, with the lowest, so that each and all must, in the main, see clearly that he is his brother's keeper, and realize the solidarity of the social world. Each man is what he is, not through himself alone, but by and through the reflection thrown back upon him from the social whole in which he lives and has his being. Under monarchies and despotisms the same fact was true, but there was such a mirage created by the principle of caste that it could not be seen clearly except by deep thinkers. Here it is visible, for the common laborer is also a voter, and participates in making the laws of a free government.

SOME SUGGESTIONS FOR THE OPPONENTS OF COMMON SCHOOLS.

We say, therefore, to the aristocrat who grudges his contribution to the common schools, or who looks askance and asks, "Why educate the children of the common laborers?"—for your own well-being and the well-being of your children, the children of all must be educated. For here all, and not the few, govern. If you wish property safe from confiscation by a majority composed of communists, you must see to it that the people are educated so that each sees the sacredness of property and its service to the world in making available to each the industry of the entire population of the earth.

HOW THE STUDY OF GEOGRAPHY IS RELATED TO DAILY LIFE.

The study of geography in our common schools is one long lesson in the dependence of each people on all others through commerce. The industry of each nation is not the industry of individuals to supply their own immediate wants, but an industry which pours its productions into the markets of the world, and in return receives its just share of the productions of all climes and seasons. Geography is the scientific presentation of this process of producing and distributing the material blessings of civilization. How this is all accomplished is stated in a systematic exposition addressed to the thinking intelligence of the child or scholar. For geography tells us what each place produces and supplies to the rest of the world, and thus exhibits the dependence of all on each and of each on all. Is there any study better calculated to interest him in the conservation of those great social institutions based on property? Not, indeed, unless it is the study of human nature as revealed in those best selections from literature contained in his school-readers.

WHAT THE SCHOOL READING BOOK DOES FOR THE CHILD.

In his reading-lesson he finds the poetically-inspired expression of his deepest and purest feelings, of his subtlest insights, of his truest moral instincts. Out of the dim region of semi-conscious instinct they come forth to the light of conscious conviction and felicitous expression in words,—and all this through the study of reading in the common school! Here he gets not only social science, but also moral culture. The soul of the child of the common laborer kindles with aspiration as he reads burning words of patriotism and immortal valor, of disinterested heroism and self-sacrifice for others. He feels his inborn divinity as he reads of the triumphs of his race, and sees in the visions of poets the lofty ideal of the future set before mankind. All this is not wanted, we are told, in the children of the common laborers. If not, we are sorry for the person who does not want it. He is so blind that he does not see the shore of Charybdis when he steers away from Scylla,—he steers away from a restless and adventuresome class of people, but only to run into the evil alternative of a people leagued together against capital, full of communistic dreams about labor and wages, with no broad humanitarian feeling, with patriotism rooted out by international association against the rights of property. He is willing to have a proletariat elect his legislators, if only he can find cheap bootblacks and house-servants.

IN A REPUBLIC ALL MUST BE EDUCATED.

It is indeed a great thing to have even one class of society educated. No doubt all profit by it, even when the education is confined to the few. But in a democracy all must be educated. The interest of property demands it, the interest of the government demands it. * * *

Where all are educated, and directive power exists on every hand it finds its employment chiefly in building up the wealth of the community. The directive power required every day to manage the large banks of this country, to direct the great railroads, or the manufactories and corporations of various kinds, is infinitely more than that required to direct our Government. The management of the New York Central or the Pennsylvania Railroad system is as great an affair as the government of a small kingdom.

Self-directive intelligence makes for itself avenues of employment. Directive power is the only power that is never wasted.

RECENT ACTIVITY OF EUROPEAN GOVERNMENTS IN ESTABLISHING PUBLIC EDUCATION

Within the past twenty-five years great strides have been taken by European governments in establishing systems of public education. It has been seen, clearly, that unless the laborer was educated the industrial product would be inferior and come to be discriminated against in the markets of the world. Technical education thus began at South Kensington, for England, as it had been before established in France and Germany. The foresight of the Great Frederick, backed by the religious dogmas of Luther, secured general education to his people. The weight of the Prussian people in war came to be seen in their Austrian and French campaigns. Since these wars, public education has received an enormous impulse. Not merely the industrial success of the people, but national independence itself, seems dependent on the general education of the people. * * *

NOT ONLY PUBLIC ELEMENTARY BUT PUBLIC HIGHER EDUCATION DEMANDED IN A REPUBLIC.

In our country, where each is born to all the rights of mankind without distinction, all must be provided for. Not by pauper schools, for that would be to burn into the public mind of the youth his misfortune, and he never would outgrow the stigma. Neither is it safe to leave the education of the youth to religious zeal or private benevolence, for then inequalities of the most disastrous kind will slip in, and our State find elements heterogeneous to it continually growing up.

The government of a republic must educate all its people, and it must educate them so far that they are able to educate themselves in a continued process of culture extending through life. This implies the existence of higher institutions of public education. And these, not so much with the expectation that all will attend them, as that the lower schools, which are more initiatory in their character and deal with mere elements, depend for their efficiency upon the organization of higher institutions for their direction and control. Without educating in higher institutions the teachers of lower schools, and furthermore without the possibility hovering before the pupils of ascent into the higher schools, there can be no practical effect given to primary schools.

HUMAN BEINGS SOMETHING OTHER THAN MERE INDUSTRIAL MACHINES.

If the monarchies of Europe think to put off the people With mere polytechnic and industrial education, they will find that they have fostered a directive power that will grope for and find the helm of State, and then attempt to administer the government. The mistake will then become visible. Man will not submit to be educated simply as a director of machines and instrumentalities of industry. He soon aspires to direct himself and be self-governed. To be sure there is a long step from the mere hand-laborer, the one who turns a crank or carries a hod, the galley-slave who works chained to his oar,—there is a long step from the mere physical laborer to the director of a machine, to the engineer, the overseer of a loom, or the manager of a telegraph. The former is all hands; his own brain even is a mere hand, governed by the brain of another, who directs him. But when directive power develops so far as to direct and govern machine-labor, nay, even when it is so far cultured as to reach the principles of natural science and be capable of applying these in mechanic inventions, even then it is not at its summit of realization. It will stop at nothing short of the spiritual culture that makes it alike directive and governing in the sphere of mind; the realm of social, moral, and intellectual existence.

Human instruments, whether mere hod-carriers or locomotive-engineers, will not stay contentedly as instruments; they aspire to transcend their hard limits, be they ever so near or never so far off. The higher already, the greater the aspiration. Blind aspiration, from which enlightenment is carefully shut out, leads to July revoutions and reigns of terror; over the ashes of the burnt-out volcano of popular frenzy marches Napoleonic imperialism with cold, unsympathetic step toward the return of Bourbonism and absolutism.

THE DANGERS INCIDENT TO A MERE INDUSTRIAL EDUCATION.

Not only mechanical directive power shall be taught in the people schools, but also spiritual directive power. The snobbery that patronizingly talks of the education of the lower "clashes" does not know that the industrial civilization it affects to admire is an instrument that only democracy can wield :—leave out the humanities from that education, and you leave out the culture that can guide its course, and Communism and Socialism and abstract theories will find their way quickly into the heads of the laboring classes. No merely industrial education can prevent the mind of the people from being fly-blown with crazy political and social theories, destructive to the State. Not merely natural philosophy, chemistry, mathematics, and biology must be studied, but likewise the science of society, of the State, of art, religion, and philosophy, in all their phases. The great educators of the race,—Homer, Dante, Shakespeare, and Goethe, Plato, Aristotle, Leibnitz, and Newton,—these must be made accessible to the people. Each child must be waited on by the institutions of man and invited to see the spectacle spread out before him from the lofty summit of civilization; his human brothers that have added a cubit to the world's stature by their heroic labors, must be pointed out to him; the methods and results of their attainments must be revealed to him; noblest aspiration and earnest self-sacrificing endeavor must be aroused in him as the means of achieving his individual task in life. The whole world of the past and present is made, by education, the auxiliary of each man, woman, and child.

Is it not the duty of the State to make the practice of the good possible? This is the definition which a western statesman has suggested as a substitute for that other definition which says that a State exists for the protection of property,—"The State exists in order to make the practice of the good possible."

MACAULAY ON POPULAR EDUCATION.

Says Macaulay, in the speech from which I have already quoted:

"I hold that it is the right and duty of the State to provide for the education of the common people * * * I say that the education of the people ought to be the first concern of a State, not only because it is an efficient means of promoting and obtaining that which all allow to be the main end of government, but because it is the most efficient, the most humane, the most civilized, and in all respects the best means of attaining that end. * * * Sir, it is the opinion of all the greatest champions of civil and religious liberty, in the old world and in the new. [Here he refers to the Pilgrim Fathers, and their insight into the necessity of popular education.] * * * Those men, forever illustrious in history, were the founders of the Commonwealth of Massachusetts. But though their love of freedom of conscience was illimitable and indestructible, they could see nothing servile or degrading in the principle that the State should take upon itself the charge of the education of the people. In the year 1642 they passed their first legislative enactment on this subject, in the preamble of which they distinctly pledged themselves to this principle,—that education was a matter of the deepest possible importance and the greatest possible interest to all nations and to all communities, and that as such it was, in an eminent degree, deserving of the peculiar attention of the State."

A FEW WORDS WITH WOULD-BE ARISTOCRATS.

To the believer in caste we would finally address ourselves. We would say: All the studies of the common school are conservative in their character, because they all open the windows of the soul and give the mind insight into the substantial character of the institutions of civilization. They all tend to produce the conviction that the well-being of man is best furthered by the very instrumentalities that have been discovered and elaborated by the race, and especially by modern civilization. Reading, writing, arithmetic, geography, history, and grammar, all open the soul to light on the question of subduing nature, or on the question of the character and destiny of the human mind as revealed in language or social usages, or political forms and changes. The good school, moreover, teaches industry effectually. But its industry is that of directive intelligence, because the progress of civilization supplies more and more the machinery to perform menial service, and makes it necessary to educate all into directive intelligence. Your opposition to the system of public schools may result in their loss of popular favor.

WHY COMMON SCHOOLS SHOULD BE SUSTAINED.

Their loss of popular favor will result in stinting their support, and decrease of appropriations will drive away the best and most enterprising teachers. But the final result will be averse to the education of the less intelligent classes. They will come by degrees to undervalue education altogether. The common schools being under the ban, there will be no pressure of public opinion to cause attendance upon them. Besides, they will be in reality inferior, because their excellence depends upon their patronage by the better classes in a large measure. That school which educates all classes in it is the most wholesome in its influence, because it helps the lower social rank by association with finer manners, while it helps the higher social rank by bringing it into a better knowledge of human nature by associating it with simpler and more direct manifestations of character,— the poor classes being better studies for human nature, because more impulsive and less under the control of social forms which disguise the manifestation of native inclinations and impulses. Inasmuch as the hope of civilization depends upon the elevating influence of the educated and cultured classes upon the lower and lowest strata, it follows that our educational system should see to it that the cultured class thoroughly understands and sympathizes with the lower classes, who lack knowledge or wealth, or both. I say sympathize, because I take it for granted that no American deems it desirable or possible to oppress the lower classes, and keep them down. We have universal suffrage, or something approaching to it. What we permit our neighbor to be, that we set up as the arbiter of our political well-being; for his ballot will determine our government.

The caste principle can find no encouraging sign for it above the horizon of the world's history. The foxes indeed have holes, and the birds of the air have nests; but the advocate of the principle of social inequality as the goal of education, has no place where he can lay his head on this planet, and enjoy a sweet and refreshing repose. If he goes to Russia, there is the Nihilist and the boiling-up of the nethermost depths in the name of revolution and negation. If we must regard civilization as necessarily implying caste and inequality, says the Nihilist, let us place dynamite under the whole structure and blow it into the air. No peace there. * * *

A FEW SUGGESTIVE STATISTICS.

Does the critic of our school system who believes in caste, and asks, "Is it wise or best to educate our children beyond the position which the vast majority of them must always occupy?", suppose that reading, writing, and arithmetic are studies too high for the lowest mechanic or day-laborer in a country, where his vote counts as much as that of the wisest and richest man? Or does he, perhaps, suppose that all the people are already past the three R's, and briskly advancing into the intricacies of philology and classical archeology? Who has told him this? The census of our country for 1870 said: "Of the population over ten years of age, 5,658,144 cannot write; 4,880,271 of these are native born, and 777,873 are of foreign birth; 2,750,000 of these illiterates are colored. The total population of the nation over ten years of age is 28,228,945. Hence 20 per cent. of the population over ten years of age could not write in 1870. In Massachusetts, even, there were 97,742 who could not write,— 89,830 of these being of foreign birth, and only 7,912 being natives. Seven thousand is a large number for a State like Massachusetts. Twenty-three thousand illiterates were in Boston!

The census of 1880 tells us, again, that there are 6,239,958 persons unable to write, out of a total population of 36,761,607 persons of ten years of age and upward. Of these, 28,424 are in Connecticut!

The number in our common schools who are studying reading, writing, and arithmetic, chiefly, with a little geography and much less grammar, is so large that the balance who are studying the higher branches is pitiably small in comparison. In the great cities, the number engaged in high-school and college studies is only one in ten in the most advanced of cities, and only one in fifty in the average of cities. And yet our dreamer of caste and inequality, mutters in his sleep: "The cruel suspicion is forced upon us that our present educational system largely unfits young people to deal with the actual necessities of those who are to earn their own living. It takes away self-reliance, begets conceit, and draws attention to what is ornamental rather than fundamental." Reading, writing, and arithmetic, it seems, are not practical enough because they are general disciplines, and give directive power to all who possess them. The one in fifty who is studying algebra and Latin is grudged his privileges. A knowledge of hod-carrying is more practical than writing!

LISTEN TO THOMAS CARLYLE.

When, in 1843, the English Parliament were debating whether the sum of £30,000 should or should not be appropriated "for the encouragement of schools for the common people," and when they had just appropriated £60,000 for the support of the Queen's horses and hounds. Thomas Carlyle, then writing his soul-stirring book on *Chartism*, set down in letters of fire these words on the general humanitarian aspect of the question of government support of education:

"Who would suppose that education were a thing which had to be advocated on the ground of local expediency, or, indeed, on any ground? As if it stood not on the basis of everlasting duty, as a prime necessity of man. It is a thing which should need no advocating, much as it does actually need. To impart the gift of thinking to those who cannot think, and yet who could in that case think; this, one would imagine, was the first function a government had to set about discharging. Were it not a cruel thing to see, in any province of an empire, the inhabitants living all mutilated in their limbs; each strong man with his right arm lamed? How much crueller to find the strong soul with its eyes still sealed, its eyes extinct, so that it sees not. Light has come into the world, but to this poor peasant it has come in vain. For six thousand years the sons of Adam, in sleepless effort, have been devising, doing, discovering; in mysterious infinite, indissoluble communion, warring, a little band of brothers, against the great black empire of necessity and night; they have accomplished such a conquest and conquests, and to this man it is all as if it had not been. The four-and-twenty letters of the alphabet are still Runic enigmas to him. He passes by on the other side, and that great spiritual kingdom, the toil-won conquest of his own brothers, all that his brothers have conquered, is a thing non-extant for him. An invisible empire; he knows it not, suspects it not. And is it not his, withal, the conquest of his own brothers, the lawfully acquired possession of all men? Baleful enchantment lies over him, from generation to generation; he knows not that such an empire is his, that such an empire is at all * * * Heavier wrong is not done under the sun."

THE CONTEST IS ONE BETWEEN DARKNESS AND LIGHT; MATERIALISTIC UNBELIEF, AND CHRISTIAN BELIEF.

One voice, the voice of Christian humanitarianism, says: Teach aspiration for all that is good and noble and divine; teach it to all, even the lowest. Teach all to desire with an unquenchable hunger more wisdom, more knowledge, more command over nature, more elevation of position, more usefulness, more directive power. The other voice says: Be contented to remain at the bottom, and quench all aspiration. All talk about perpetual growth in knowledge and wisdom is nonsense, and worse, when addressed to the children of common laborers.

The reason that the first voice gives for its creed is that its faith teaches the divine origin and destiny of the soul, and that the goal of civilization is the emancipation of each from all debasing servitude of body and mind, and that it is the Christian duty of all to help their fellow-men to rise. The reason given by the other voice is the necessity which it feels that there shall be a class in society perfectly contented to be menial servants, and fitted for nothing above that office.

The critics of our educational system are never done with telling us that its results are to make the rising generation discontented with its lot. As if this were a defect rather than the greatest glory of an educational system! What place is there in our system for a drone who is utterly devoid of aspiration? To be like dumb, driven cattle,— is this permitted or encouraged in a Christian civilization? Man is immortal, and has an infinite destiny,— this is the burden of Christian teaching. In consequence of this, Christian civilization strives towards the heavens, it subdues nature and makes natural forces toil for it, and procures food, clothing, and shelter for the body. It continually turns out the drudge from his vocation, and says to him: I do not want your mere bodily toil at any price; I have a machine that can do such work better than the like of you, and at less than what you would call starvation-wages. Up, therefore, and acquire directive intelligence so that you may manage and direct this machine, and other machines; for presently we shall need no more mere hand-labor, but require all to be intelligent and directive."

As made in the image of God, and as destined for His eternal kingdom, is it possible to look upon any education that schools may give us as too high for the position to which a human being is called to occupy in life? In view of the necessity for educated directive power in an age of productive industry, when the superintendence of machines is the chief industrial business, is a general education that gives one insight into nature and insight into the human mind too much? In a representative democracy, in which the laws that govern property and personal rights are made by the representatives elected by all the people, including the humblest citizens of the country, is any education too good for the people?

The American people answer, No.

VII.

FACTS VERSUS THEORIES.

SHOWN BY THE RECORDS KEPT FOR TWENTY-TWO YEARS BY THE PRINCIPAL OF A HIGH SCHOOL, GIVING THE SUBSEQUENT OCCUPATIONS PURSUED BY THE GRADUATES.

In view of the occasional assaults upon the public schools of all grades and upon the methods of teaching followed in them; and especially in view of the attacks made upon the High Schools; as well as the disposition shown by some to confine all free public instruction to the narrowest possible limits; on the plea that the education there given trains the pupils away from industries, gives them false notions of life, unfits them for usefulness, etc., etc.; through the whole gamut of carping criticism indulged in by certain self-constituted censors, and occasionally carelessly repeated by those who would not intentionally assume an unfriendly attitude towards the schools; the following statistics of the results of such school training, as shown by the actual subsequent employments of the pupils trained in the High School of a small city in the State of Pennsylvania, comprising a history of the graduates for twenty-two years, will be found of interest.

These accusations of the evil influences of the public schools have been so often reiterated that even persons of intelligence come to believe that there must be some ground for them,—an impression recently greatly stimulated by the arguments advanced by some over zealous promoters of the latest educational novelty,—the proposed introduction of industrial training in public schools.

The statistics collected and put on record by Mr. Missimer, in which the actual facts have been carefully ascertained, furnish the best possible refutation of such vague accusations so far as this single High School is concerned. No similar records of the graduates of a public school are known to the writer, but it is to be hoped that the admirable precedent thus set by Mr. Missimer may be generally followed, and that the absurdly exaggerated charges against the schools may thus be brought to the test of truth.

Mr. H. C. Missimer, for many years Principal of the High School of the City of Erie, Pennsylvania, in a report made to Mr. H. S. Jones, the City Superintendent of public schools,* discusses at some length the question of the value and effect of the education given in the High School; and, incidentally, considers the question of the proposed introduction of industrial training in the public schools. Over against the accusation that the public schools, and more especially the High Schools, train their pupils away from the industries, and so exert a deleterious influence upon the rising generation, Mr. Missimer sets his carefully ascertained statistics which show the actual employments of all the pupils, boys and girls, for a period of more than twenty years.

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*Annual Report of the Superintendent of Public Schools of the City of Erie, for the years 1884–85, 1885–86, Erie, Penn'a. Walker & Gallagher, printers, 1887. Pp. 84.

That the High School incites the pupils to aspire to rise from the lower to the higher forms of labor, Mr. Missimer rightly considers to be one of its greatest merits. The advancing age incessantly demands a better intellectual preparation to meet the needs of the new scientific discoveries and their applications to use. He sees clearly that the schools must deal with education, not with industries, *per se.* This distinction is a sound one, as most of the advocates for Manual Training in schools have latterly practically admitted by basing their more recent arguments for its introduction upon pedagogical grounds; yet the earnest advocates of industrial training through all the stages of school life, will hardly be prepared to agree with Mr. Missimer in his extreme statement that "the problem of industrial education must be solved independently of the public school;" unless, indeed, it shall appear that by the term "industrial education" as here used, Mr. Missimer means "the definite teaching of trades;" in which event they will readily accede to his proposition.

Mr. Missimer has kindly furnished for the present Report under date of January, 1889, revised data, bringing the figures down to September, 1888, instead of only to September, 1886, with which date the statistics given in the Superintendent's report ended. With this exception the report which follows, is the report as then printed:

Report by the Principal of the High School, Erie, Pennsylvania.

This continues to be as it has been from its organization, the "people's school"—not an institution for a select number, with favorable surroundings, but for the rich, the well-to-do, those of small means, and especially for those struggling with poverty. During the twenty years of its existence many a poor boy, and many a poor girl, have been materially helped in getting on in the world by what this school has done for them.

Below, the Principal presents some of the facts drawn from the history of the school, which do not accord with many of the sweeping statements made by public speakers and writers, who have a greater capacity for handling words than for gaining and handling facts:

It is apparent to the most casual reader that the chief topic of discussion at the present time, in the educational world, is industrial education.

COMMON CHARGES AGAINST COMMON SCHOOLS.

Complaints of the inefficacy of our public school system in fitting our boys and girls for the practical duties of life are heard on every side. From press, pulpit, politician, statesman and *school* man, come the general charges that the public school courses are "overloaded with too many embellishments;" that the common English of the fathers is side-tracked by too many "extras;" that public school education is "spread over too much ground;" that it is a mere "method-grinding machine, run by teachers who are the slaves of routine and red-tapeism;" that our public school pupils "are too *much* taught;" that "under the *wise neglect* of the old time methods boys and girls developed far more individuality and strength than under the modern coaxing-coddling-explaining-everything system;" that the entire tendency of public school education is toward the "abstract;" toward the occupations that "involve only mental training," and away from the occupations that demand the use of the hands.

Nor do these charges lack the weight of high authority. James Russell Lowell, in his Harvard anniversary address, was of the opinion that "our public schools teach too little or too much; too little, if education is to go no further; and too many things if what is taught is to be thoroughly taught." Mr. A. S. Draper, Superintendent of Public Instruction of New York, said in his last annual report: "In too many localities it happens that such pupils as leave the schools while in the common grades, undoubtedly ninety per cent. of all, are no better fitted for the practical affairs of life than in the earlier days, and it is doubted if they are as well."

Governor Hill, of New York, commented at length in a late message upon the decline of the system of apprenticeship to the trades, alleging that the majority of skilled workmen in his State are from foreign countries, and that our boys have turned their backs with disdain upon the manual occupations of their fathers, and gone to join the innumerable throng of those who are trying to pick up a living by unskilled labor, which does not soil and harden the hands. Governor Hill also recommends as a remedy for this grave evil, making "manual labor within certain limits a part of our public school system, certainly in the cities and larger towns of the State." He is also of the opinion that public school education is drawing its pupils away from manual employments.

In his inaugural address, Governor Beaver, of Pennsylvania, took up the same topic of industrial education, and was thoroughly clear and positive in his belief that "the main fault of our present system is that it leads directly and inevitably to that which is abstract, and away from that which is practical. It deals in words and signs, and not with facts and things. The graduate of our average high school, as all experience proves, is educated away from what are called industrial pursuits, and into a fitness for those employments which involve only mental training. In short, the head is developed at the expense of the hand, and we are compelled to rely upon the skilled labor of other countries to fill the most lucrative and important positions which our industrial establishments offer."

According to this high authority, the engrafting of industrial, manual training upon our present school system is the natural remedy for this state of things.

THE POPULAR INDICTMENT QUESTIONED.

With the highest opinion of the ability and sincerity of the authors of these views. we do not believe that they are true. We do not believe that "the main fault of our present (public school) system is that it leads directly and inevitably to that which is abstract, and away from that which is practical."

The present occupations of those who have been educated in the public schools should most effectually show the truth or falsity of this charge. If true, the majority of such occupations should be *mental* in their character; if false, they should be manual, or industrial, in their character.

Happily, such data are at hand in the Erie High School; and in a high school, if anywhere, the main tendency of public school training should assert itself.

These are the facts.

In the twenty-two years from September, 1866, to September, 1888, there were 663 boys in attendance at this High School, of whom 66 were still in the school, and the rest. 597 are, so far as can be ascertained, engaged in the following pursuits:

Manual.—Trades, 99; railroad, 24; farmers, 35; laborers, 10; ranchmen, 4; hackmen, 2. Total, 174.

Industrial.—Business, 214; civil engineers, 9; telegraphers, 8; stenographers, 6; chemists, 3; dentists, 4; draughtsmen, 7; druggists, 3; clerks, 92. Total, 346.

Mental.—Lawyers, 19; editors, 11; doctors, 6; teachers, 11; ministers, 5: literature, 1; artist, 1; singer, 1. Total, 55.

Miscellaneous.—Army, 1; navy, 4; dead and unknown, 17. Total, 22.

That is to say, out of all the boys who have gone out from this High School, 520, or 87 per cent., are found in manual and industrial occupations; while but 55, or 9.2 per cent., are found in purely mental occupations. Does this look as if "the main fault of our present system is that it leads directly and inevitably to that which is abstract, and away from that which is practical?"

To the objection that might be made to classifying "clerks" as of an industrial occupation, it may be said that if they are not *industrial*, within the popular meaning of the term, they surely cannot be said to be of a *mental* occupation. Indeed, oftentimes the calling of clerk calls for far more *manual* than *mental* expertness. Besides our book-keepers in bank or store, clerks also include those who serve behind the counter, and more frequently than any other, the calling of clerk is the first round in the ladder that ends in business.

Though the popular complaint is that our boys are educated away from industrial pursuits, the facts about the 972 girls who have attended this high school during the same period of twenty-two years, are of interest also.

Of these there were still in school 145, and the rest, 827, were distributed as follows:

Married, 296; at home, 235; teachers, 180.

In Manual and Industrial occupations:

Clerks, 32; stenographers, 5; trades, 20; proof-reader, 1; draughtsman, 1; telegrapher, 1; domestics, 4. Total, 64.

Doctor, 1; dead and unknown, 51.

That is, 531, or 64.2 per cent., of the entire number are at home or married, the most practical spheres of life, for the fulfillment of whose high responsibilities there can never be too much education.

That only about 7.8 per cent. are engaged in manual and industrial employments cannot be cited against our public school system; because girls are cut off from such employments by the lack of the physical strength necessary to perform them; nor can the number engaged in the employment of teaching be also brought forward in support of the charge that our schools are educating their pupils "away from that which is practical." What more practical employment than that of the teacher? What calling is more useful and valuable to the community than that which trains and moulds the future citizens of the Republic?

It is further charged that "the *graduate* of our average high school, as all experience proves, is educated away from industrial pursuits, and into a fitness for those employments which involve only mental training."

The experience of our High School does not sustain the truth of this charge. Of the boys graduated since 1866, who are not in school or dead, 63.4 per cent. are in such industrial pursuits as trades, railroading, dentistry, stenography, civil engineering, business and clerking; 30 per cent. are lawyers, doctors, ministers, editors and teachers. These facts carry their own comment.

Of the girls who have graduated, who are not in school or dead, 56 per cent. are teachers, 11.3 per cent. are at home, 26.8 per cent. are married, 5.4 per cent. are engaged in industrial pursuits. Though the indictment does not lie against our girls, for reasons before given, these figures, are, nevertheless, suggestive.

WANT OF SKILLED LABOR NOT DUE TO DEFECTIVE SCHOOLS.

Finally, it is charged that the deficiencies of the public school system compel us "to rely upon the skilled labor of other countries to fill the most lucrative and important positions which our industrial establishments offer."

This is a grave charge, and if it were true, the sooner the public school system were changed, the better. But it is not true. If there are more foreign than native skilled laborers filling the lucrative and important positions in our industrial establishments, the cause is not to be attributed to the character of public school education, but to something entirely different.

There are just as many boys who want to learn trades as there ever were, in school or out of school. In the country there is usually no difficulty in doing so. In our cities, however, the case is different. Access to the trades lies very generally through the trade organizations. It is well known that in all our large industrial establishments, the number of apprentices to be admitted to learn a trade is controlled by the trade unions. They have made very stringent rules regarding the admission of apprentices into a shop, and nothing more arouses their rebellion than any attempt to override these regulations. The reason is apparent. They want to control the supply of skilled labor. For this reason, manual training in our schools would be opposed to their purpose, as it would surely tend to increase and cheapen the supply of the very labor which they wish to restrict and make dearer.

Again, a trade is seldom thoroughly learned in our large industrial establishments. One or two details of the business are the general average of our modern workman's knowledge of his trade. When a boy is put to learn a trade in Europe, he learns it in every part, and is kept at it for years. When he leaves it, he leaves a skilled workman. These are the men, whether native or foreign, who only are competent "to fill the most lucrative and important positions." No others are competent. If it be the foreigner then, who carries off our industrial prizes, one reason at least lies in the nature of our industrial system, rather than in any apparent fault of our public school system.

Again, if our boys are turning their backs on the manual occupations of their fathers, it is oftentimes not a matter of deficiency in public education, but of laxity in home education. Have we of the passing generation been as particular with our boys as the fathers of former generations? Have we not all heard of a time when a boy who got to be along in his teens, was accosted as follows: "Well, John, what are you going to be?" "It's now time for you to learn a trade, and which would you like to be — a carpenter, a blacksmith, a mason, a miller, or what?" A momentous question, truly, for John, and if John couldn't decide it, it was generally decided for him. Is there not a good deal of drift and carelessness in the decision of this question with too many parents nowadays? And if there are fewer boys learning trades, is not another reason found in the easy shiftlessness of too many parents?

Industrial education — instruction in the principles of drawing and construction, and in the principles of the various trades, is undoubtedly a proper thing for our laboring population to get; but it can not be imparted successfully as a part of public school instruction without changing the entire character and scope of our public school courses. They would have to be reduced to a minimum in order to make room for the industrial feature.

So great has been the progress in science and the useful arts in the last half century, that our public schools, even to teach the most practical things, *have* to teach now in the higher grades a good many things. Fifty years ago the telegraph was just finding practical issue from the brain of Morse. Fifty years ago the railroad was in its infancy; the steam engine and the locomotive were primitive affairs; some of the greatest discoveries in chemistry and physics, and their wonderful application to the arts were not yet made. Fifty years ago the three R's were perhaps educationally sufficient for all the practical purposes of life; but now, in the age of the telephone and the type-writer, of the marvelous applications of electricity, and the achievements of machinery, public school education, even to be most severely practical, must necessarily involve more than the traditional three R's of the fathers. To make industrial education the chief work of our public schools, or even a part of their work, would cripple or destroy their proper function. It is not their business to be a feeder of the great labor supply. With industrial education as their main feature, they could be nothing else. From that day the masses would lose forever the opportunity of higher education. That would henceforth be a luxury of the rich only.

Cut off from the masses the boon of higher education, take this privilege from the children of the people, from your child and my child, from the child of the laboring poor and the mechanic, who constitute 65 per cent. of the enrollment, even in our high schools,* and we take the first step in separating the people of the country into castes as permanent and as sharply defined, if not as numerous, as those of India. Such an educational system would be the knell of republicanism. With such a system the Declaration of Independence would have been an impossibility, and the Revolution would never have occurred.†

The problem of industrial education must be solved independently of the public school. That they should prepare our boys and girls for manual employments is an idea born, originally, of demagogism. It is not their business to make masons, carpenters, blacksmiths and shoemakers, but to instill the habits of mind that will make a better mason, a better carpenter, a better blacksmith and a better shoemaker, than would be possible without such training. The *mind* moves the hand. And with mind behind them, even the pick, the shovel and the axe are *conscious* tools.

All work is honorable. That is a lesson which the young should ever learn; but it is also honorable for them to learn that those are not the noblest occupations in life which call for one unending round of ceaseless daily toil.

Progress, culture, civilization, happiness, lie in the struggle from the lower to the higher forms of labor; from the empire of the hand to the empire of the mind. To teach otherwise is to cut off the strongest incentive to a boy's best effort and a girl's highest hope.

†To teach men the practical things of life, which life itself will be sure to teach, is not so much education as to train the individual intellect of all, and so to find out who are competent to increase the general welfare by occupying the highest positions in life. To teach knowledge of self, to promote morality and refinement through the teaching of self-discipline and self-control, to lead these young human souls "to see that the highest, as it is the only permanent, content is to be obtained, not by grovelling in the rank and steaming valleys of sense, but by continual striving towards those high peaks where, resting in eternal calm, reason discerns the undefined but bright ideal of the highest Good, 'a cloud by day, a pillar by night.'" this, and this only, is education.

H. C. MISSIMER,
Principal High School.

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*For the last two years, the "rich" and "poor" statistics in the Erie High School, are as follows:—

Whole number in attendance—347.
Number whose parents have no property assessment: 54, or 15.5 per cent.
From nothing up to $250, 149, or 40.1 per cent.
From nothing up to $500, 200, or 57.6 per cent.
From nothing up to $1,000, 213, or 61.1 per cent.
From nothing up to $1,500, 236, or 68 per cent.
From $1,500 up to $32,000, 111, or 32 per cent.

†In an article entitled "Something for the Educational Iconoclast," which appeared in "The Academy" for April, 1889, embodying this report, this paragraph was added.

The practical character of the studies in the High School, and the degree of popularity which each enjoys, are shown by the following

RANGE OF STUDIES.

The range of studies for the year 1884–85, with the number pursuing each, is as follows:

Arithmetic, 87; Book-keeping, 62; Algebra, 127; Geometry, 47.

Latin, 93; Greek, 4; German, 155; French, 18; Rhetoric, 35; English Literature, 25; General History, 25; English Grammar, 27.

U. S. Constitution, 51; Physical Geography, 142; Physiology, 105; Chemistry, 15; Physics, 24; Geology, 8.

Music, 229; Drawing, 147; English Composition, 207; Declamation, 207; General Information, 207; Mental Philosophy, 14; Object Teaching, 14; English, 209.

The range of studies for the year 1885–86, with the number pursuing each, is as follows:

Arithmetic, 107; Book-keeping, 29; Algebra, 140; Geometry, 74.

Latin, 8; Greek, 2; French, 13; German, 159; Rhetoric, 20; English Literature, 17; General History, 8; English Grammar, 39.

Physical Geography, 90; Physiology, 70; Chemistry, 42; Physics, 53; U. S. Constitution, 89.

Music, 225; Drawing, 140; English Composition, 218; Declamation, 218; General Information, 218; English Authors, 220.

VIII.

AN INDICTMENT AGAINST THE AMERICAN SYSTEM OF FREE COMMON SCHOOLS.

INTRODUCTION.

The free, public, common school has become so thoroughly incorporated in the lives and thoughts of American communities, that I have felt, many times, while collecting and collating the articles which make up the present Appendix, that the objection would occur to many readers that it was wholly needless and unnecessary to encumber this Report with arguments,—however excellent in themselves and from whatever high authorities,—in support of common free schools. I confess to having been much surprised when the conviction was first forced in upon me that there were still to be found, in this free Republic of ours, many who antagonized the whole system of public schools. Since that day, however, the antagonism of one branch of the church has become patent to all. The children of foreign emigrants, who need the Americanizing influence and associations of common schools to transform them into true Americans, are to be sedulously kept from these schools.

The motives which lead to this action are, however, evident and comprehensible. Another class of objectors were met by Horace Mann in his initial efforts to create the system of free common schools in Massachusetts, who pleaded that to establish these schools at public cost would be an infringement of the rights and liberties of the citizen. Their arguments were at that time so thoroughly answered, that they fell into desuetude, and those who urged them were long thought to have met with the fate of the Dodo.

Erroneously believed to be included among the instances of a form of government which the holders of one theory of government vigorously antagonize, these schools of the people have, from time to time, been bitterly attacked by political theorists and champions, but such political opposition is generally sporadic and short-lived. These schools have been found too securely entrenched in the popular heart, to offer a very inviting field for any political missionary opposing them, and generally politicians of all parties vie with each other in urging their own claims as friends and supporters of the free common schools.

Still the recent sudden development of combined effort to build up all over the country the parochial schools by preventing attendance on the free common schools,—and the fact that old arguments are continually revamped and urged, now against all free schools, again, against particular classes of free schools, or against particular studies; all go to warn the friends of free schools that the "price" they must pay for them, is no less than that set by the martyr patriot on Liberty,—"ETERNAL VIGILANCE."

Each generation needs to know on what an enduring basis of reason and necessity these schools rest, in order that they may suffer no harm. It was for this reason that the preceding papers were here inserted.

We come now to a very different paper, which is here given in full. This paper is given, primarily, to show that the opposition to free schools is not merely an obsolete, traditionary theory, but really exists and finds advocates to-day.

While this Report has been passing through the press the striking book, entitled "Industrial Liberty," from which the following paper, comprising an entire chapter, is taken, has appeared. The entire chapter is here quoted in order that the author may state his case with all the fullness given in his own volume; otherwise, for the purposes of this Report, most of his references to the Church, and to the Freedmen, might as well have been omitted, and only the extracts directly applying to the free common schools given. Perhaps it should also be stated that none of the "cross heads" appear in Mr. Bonham's book—they have been inserted here by the editor of this Report.

In this work the author treats of important and timely topics in a forcible and often original manner; and, in many cases, as it seems to me, far more successfully than he has done in the chapter quoted. He recognizes the changes wrought by the discovery and utilization of the new forces of steam and electricity, with the inevitable accompanying turmoil and complications incident to the tremendous readjustments of industries and conditions, which have been thereby necessitated, all over the civilized world; but he maintains that principles remain, and that the outcome must be in accordance with the ordered laws of mental action, of true political economy, and of human liberty, concerning all of which he is hopeful. He seems inclined to carry his theories to their logical results with all the theorist's careless disregard of present conditions or consequences—a characteristic common alike to the mediæval expounders of theology and to the professors of the so-called science of political economy in this nineteenth century. Such comments as seem called for by his chapter on common schools will here follow that chapter.

THE AMERICAN SYSTEM OF FREE COMMON SCHOOLS AS CHALLENGED, CRITICIZED AND CONDEMNED IN A RECENT VOLUME.[*]

CHAPTER X.

PATERNAL GOVERNMENT—Continued.

Definition of paternalism—The common-school system—Origin of the system and the results to civilization promised by its advocates—The results after fifty years of trial—Its antagonism to the principles of industrial liberty.

From the conditions described in the preceding chapter as the causes of paternalism, we may by generalization make such a definition of paternal government, in contradistinction to the government of self-dependence, as will enable us in this respect, to measure the usual character of our current legislation.

That government is paternal which in any way erects or creates obstacles tending to interfere with the industrial incentives and equal political rights of the citizen, or which fails to prevent the creation of such obstacles, or to remove any existing ones.

Under this rule a government is paternal: first, when it supports or recognizes any political or industrial class; as, for example, when it supports a tariff for protection, because it thereby necessarily confers industrial privileges upon one class at the expense of another.

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[*] Industrial Liberty, by John M. Bonham. New York and London: G. P. Putman's Sons. The Knickerbocker Press. 1888. Pp. 414.

Second, when it permits any *quasi*-public corporation to make discriminations between citizen and citizen, or to interfere in any way with their equal industrial rights.

Third, when it exacts contributions from its citizens to be used in interfering with the family relation, and endeavoring to regulate and mould human faculties; as is illustrated in what is called the common-school system.

Fourth, when, through the legislature or the courts, it interferes with the equality and sanctity of contract, either by attempting to impart to the obligations of the government the quality of legal-tender, or by establishing any priority of lien for any industrial or special class.

Fifth, when it engages directly or indirectly in any industry in competition with the individual citizen, where the motive for such industry is profit.

A NON-PATERNAL GOVERNMENT DEFINED.

On the other hand, a government is not paternal: first, in providing for the supervision and control of all of its artificial creations, such as the *quasi*-public corporations, whenever the powers granted to such creations may in any way affect the political or industrial right of the citizen.

Second, in undertaking to do those administrative acts for the whole public which may not be done by the individual, but which are necessary for the whole public advantage, and which therefore conduce to the well-being of all of the citizens; such, for instance, as the regulation of weights and measures; the coinage of money; the establishment and support of the army and navy, including the governmental care of the soldiers and sailors who have been disabled in service; the maintenance of the necessary fortifications for defence; the administration of the civil service; and the assessment and collection of taxes for the support of the government.

Third, in providing for the regulation of the manufacture and sale of intoxicants and poisons; for the prevention of the adulteration of food; for the preservation of the peace; for the government of the Indian tribes; and for the prevention of interference by the criminal and defective classes with the industrial and political right of the citizen.

It will thus be seen, in a general way, that what distinguishes a non-paternal government from a paternal one is that the former does not in any case tolerate any interference with the equal industrial incentives, the equal political right, or the freedom and sanctity of contract of the citizen; while the latter not only tolerates but fosters such interference.

As I have already discussed protection and indicated its paternal character, I will not, therefore, consider it here.

Having also considered the relation of the *quasi*-public corporation to the State, I will only say with reference to the paternal phase of it, that a government which permits a *quasi*-public corporation to do anything that is paternal must itself be a paternal government; for the non-paternal government cannot permit the exercise of paternal powers. If, then, there exists in a corporate franchise any element of paternal power incident to the exercise of that franchise, it must be the duty of the non-paternal government which created it, to hold such corporation within the non-paternal bound; and in order to do this, it must be able to supervise its management. No act that is necessary to accomplish this purpose can be construed to be paternal, because the whole scope and intention of such act is to prevent paternalism.

THE COMMON SCHOOL SYSTEM ILLUSTRATES THE EVILS OF PATERNALISM.

"I come now to consider and discuss more particularly that instance of paternalism, which is noted above as next in order to the two last mentioned, namely, the common school system. I choose to discuss this in order to show that in a free government there can be no paternalism whatever, however beneficent its aim or however beneficent its immediate results. I think it may be shown not only that wholesome legislation cannot depend upon the beneficent design of its originators; but that if legislation is paternal in its character, the loftiness of the sentiment which inspires it will not in the least degree mitigate its evil political consequences. Indeed, that a policy which ostensibly promises wholesome results, but whose ultimate results are vicious, is far more dangerous than one which bears iniquity upon its face; since the former is the more likely to receive general acquiescence and support.

I know that it will seem ungracious to very many that one should undertake to question a system which has so many pleasing sentiments about it, and upon which there rests so much honest hope for the future of the race — a system which with many constitutes a panacea for all political and moral ills. But ungracious as this challenge may seem, if it leads to wholesome conclusions it must become manifest that it has seemed ungracious only because it has disturbed illusions. To determine whether legislation really supports and furthers civilization, it must be measured by the judgment and the intellect, not by the sentiments or the emotions. It is the first duty of a reformer to see that in his attempts at reforming any existing evils his reform does not tend to interfere with persistent natural laws. It is his duty to contemplate dispassionately and analytically not only those things which the proposed legislation is intended to achieve, but what it will achieve — those remoter issues which his movement will set up, and also the collateral issues which it affects. Any political system, therefore, for which permanency is claimed can only properly be measured by taking into view the farthest-reaching consequences which we by any possibility are capable of discerning.

EVILS OF THE SYSTEM STATED INFERENTIALLY.

A great deal of the sacredness which surrounds the common-school system, in the minds of most, comes from the assumption that it is a process of enlightenment which will, in some way or other, compel the advance of civilization.

If this assumption be not borne out by the resultant facts, this sacredness must disappear. If it be found upon examination that the methods of this system are artificial, that they tend to unify rather than to diversify and recognize existing diversity in the human intellect, it must thereupon be admitted that to the extent they do this at least they do not accomplish a wholesome result. If the general growth of civilization does not depend so much upon knowledge derived from books as upon industrial training and education derived from association, and if the study of books is artificially pressed and does not of itself produce a natural or a wholesome result upon the race, then, judged by the sum of its results, the system is not answering the purpose of those who support it.

EVILS STATED DIRECTLY.

The objections to this system may be thus indicated in their natural order: First, that it is inconsistent with the principles of a free government to enforce a policy which begins with an unequal exaction from the citizen — a policy which declares that A shall be responsible for the schooling of B's offspring, and that part of A's industry shall be exacted from him for this purpose; second, that it is likewise inconsistent for the government, by arbitrary interference, to assume the father's duty; and third, that it is likewise inconsistent for the government to seek by an artificial effort to unify those faculties which nature has made diverse. The thesis is that such a policy must in the sum of its consequences deteriorate the freedom and well-being of the race.

ANALOGIES TRACED BETWEEN EVILS OF A STATE CHURCH AND THE COMMON SCHOOL SYSTEM!

The common-school system, in its influence upon secular life,exhibits some points of close resemblance to that influence which was exhibited in the province of religious life by the Church, when the Church and the State were united, with this difference, that in the common-school system the influence which it is intended to exert is primarily upon the secular affairs of life, with the incidental hope of producing a higher quality of morals. It is thus secular and ethical. On the other hand, the influence that the Church aimed to exert, was primarily upon the spiritual faculties. Each of these systems, however, assumed alike the beneficence of the end as a warrant for its existence. This was the supreme motive for their being; and their advocates are equally averse to a passionless examination of the disasters which the systems entail. In the common-school system the influence exerted is upon the general intellect; with the Church, the influence which was exerted was upon the moral and the spiritual faculties. In each case the supreme beneficence of the motive is set forth to forbid all careful inquiry into the methods. The Church, armed with the power of the State, reasoned, if its premises be conceded, with unanswerable logic. It set forth that immortal life was of far more consequence than the vanishing affairs of this world, that therefore that life must receive the greatest thought and attention of all men, even to the exclusion of the concerns of this life; that as a religion was essential for each individual, a rigorous creed must be formulated to keep the ignorant from error; that truth, being a unity, must be assured in uniformity and so accepted, and to insure this uniformity there must be one authority to enforce this acceptance. This authority, assumed to be direct from God, must be accepted without question, in its unity, for the eternal welfare of each individual. Nothing can be more sacred than the office of the men who were thus to accomplish and preserve this one faith for humanity. In the purer days of the Church its teachers were thoroughly imbued with the belief that they were the divinely appointed agents of Heaven for thus securing the highest hope of the race. By the sanctity of their lives, by their personal abnegation, they illustrated the beauty of this unified faith: and when occasion arose, by their martyrdom they sealed it with their blood. It is impossible to conceive of an ideal higher than theirs, or of aims more beneficent. But their aims were false, and the means which were employed as their power grew, instead of tending to elevate the political condition of mankind, weakened and degraded it. Thus the Church with its authority made man a dependant and not a freeman. The uniform faith which it exacted in all details tended to make him but a part of a machine. Uniformity in belief and in practice was enforced; religion became not a matter of individual conviction from within, for individual conviction was intolerable, but something which must be impressed from without, and which could be forced into uniformity to the gain of eternal salvation even if at the sacrifice of human freedom.

No one who is acquainted with the enthusiastic efforts of the first leaders of the free-school movement can doubt the earnestness of their convictions, the loftiness of their purpose, the philanthropy of their aims. Even in their official reports there is a certain verve which marks them as enthusiasts almost to a spiritual degree. Great, however, as were their aims, they were not greater than those high aspirations which characterized the efforts of the heroes of the early Church and which tended to make man wretched and degraded.

The world for ages bore the yoke of ecclesiastical unity more or less submissively, based as it was upon the assumed conditions of salvation. The processes for producing that unity grew more and more exacting as the authority increased and took to itself those vices which ever accompany the possession of power confident of its domination. This continued until these processes became intolerable. Mankind came at last to realize the utter injustice of the situation, notwithstanding its front of such seeming beneficence. It is not flattering to the wisdom of the race to note the manner in which this realization came about. It was not through intelligent examination, but mainly by dynamic inflences that men found the evil results of Church rule. The maxim long since learned and forgotten, relearned and then again forgotten, *Res nolunt diu maladministrari*, expresses the eternal failure of artifice to work against nature, and the disasters which must accompany such failure. When the leading countries of western civilization realized their condition, they threw off the yoke. Taught by bitter experience, they learned at length that, dear as the unified faith might be, essential as many still continued to think it, all faith must thenceforth be treated as a matter of individual conviction, not to be dictated by the authority of a council: that the variety of moral and spiritual faculties must be accepted as a fact, in order that greater human liberty should be assured. When this was accomplished, it was found not only that spiritual health did not depend upon the old conditions, not only that humanity could not be raised by being constrained, but that real moral and political health were one: that they could not exist in political slavery, and that both spiritual and temporal welfare flourished best in political freedom,—in recognition of the variety of the moral and spiritual faculties and the impossibility of reducing them to uniformity.

I say it took ages to realize that freedom was thus smothered under the power of a hierarchy; that freedom was thus repressed by the very sublimity of the aims of that hierarchy. We had hardly arrived at this realization when, moved by the same desire for good in the intellectual field that the early Church had exhibited in the religious field, we instituted the free-school system. Thus we began to forget the great lesson, and to lose the high vantage ground of history. The high-priests of the common-school system took the children from the priests of the Church, who had been attempting to cast men, women, and children into a spiritual and moral mould, and proceeded, though with some modifications of method, in the attempt to cast their minds in other artificial moulds. It may take ages for us to learn that however desirable true education may be, it can only properly be acquired and can only promote freedom in accordance with the law of freedom.

STATEMENT OF THE PURPOSES AND METHODS OF HORACE MANN.

Horace Mann has been regarded as the father of the common-school system. He started with the postulate, which I have indicated, that a system of uniform teaching, from uniform books, by uniform methods, was necessarily beneficial and civilizing. Having satisfied himself of the truth of this postulate, he threw his whole soul and life into a work which, being thus philantrophic, he believed in the end to be virtuous. He justified almost every means for the attainment of the end. He deplored any attempt at variety of instruction, and said that "the multiplicity of books in the schools embarrasses all kinds of instruction." He said that "money for the more liberal payment of teachers was to be won from the pockets of the wealthy by persuasion or exacted by law." He expressed the opinion that existing school-houses were insufficient, and were to be swept away from the State by "appeals to duty, to decency, to paternal love; by rebuke or by ridicule; by any means not absolutely criminal." In the progress of his work he soon came to find that what he called his "vigorous reformatory measures" aroused opposition; that those whom he designated as "the penurious" would resist taxation; that "the slumberers would beat away the disturbers of their peace"; that "the lovers of caste would repel the companionship of their social inferiors"; that "all malcontents would unite to commend the old as time-hallowed and safe, and to condemn the new as utopian and dangerous."

One of the first discouragements in the progress of the system was public indifference, which caused the non-attendance of pupils. Mann called this "a sad chapter in the year-book of the schools." While he saw a slight improvement from year to year, he thought the "disease" too chronic and deep-seated to yield to anything but energetic treatment, and entertained hope that a government which had passed quarantine laws to prevent the importation of physical disease would soon advance so far in wisdom as to enact similar legislation to overcome what be called "the ignorant and vicious abandonment of children and youth;" and he maintained that until this was done, it was the duty of all officers connected with the cause of education to expose, with stern fidelity, the delinquency of parents who neglected to send their children to the schools provided for them.

Mann was ready to employ the power of the government to carry out his system, in its application to human intellect, to its logical conclusions. If he had been possessed of the surgical power necessary to mould human faculty into exact unity, he would have produced a fine uniformity—but what would have become of civilization? He assumes the whole process of nature to be artificial—the result of some mechanism. He makes this mechanism an attribute of divinity and says: "At a vast distance, but still in imitation of the divine processes, does man proceed for the completion of every work of his hands." He further says: "Supposing matter to have been created by the fiat of the Almighty, a substantial and beautiful analogy may be traced between the methods pursued by the Creator and the creature in the formation of the works of their hands." And with the rapt soul of a seer he declares that "under the providence of God our means of education are the grand machinery by which the 'raw material' of human nature can be worked up into inventors and discoverers, into skilled artisans and scientific farmers, into scholars and jurists, into founders of benevolent institutions and the great expounders of ethical and theological science."*

In all this process of reasoning he never endeavored to work out, as a problem, what type of social structure this machinery would ultimately produce. With the postulate that artificial education was a good thing, he was mainly occupied with proximate results, and depended upon his imagination to forecast the general consequences. His conclusion was that if it were possible for all to be equally educated it would be wholesome; and by education he meant a process of mind-cramming with uniform books, the necessary result of which would be to take those who were thus educated away from the conditions of life to which they were best adapted. He failed to see that such an education of the masses was not a differentiation of faculty, but tended to a unification inevitably hostile to general progress.† With a thorough faith in his philanthropic ideas, he thinks and says that true statesmanship consists "in organizing these ideas into a system and then putting that system into operation as a mechanic does a machine." ‡

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* "Twelfth Annual Report of the Board of Education of Massachusetts," together with "The Report of the Secretary of the Board, Boston, 1849," p. 38

† Nor is it alone with this leader that the results of such mechanical unification are regarded as wholesome. The pulpit also creates its utopias and assumes that healthy growth may arise from mere beneficence of intention. Mr. Savage, in one of his sermons says:

"Our common graded school system of to-day starts with the idea that every boy who begins in the lowest class in the primary department, if he follows the system clear through, will ultimately land at Harvard. It is a pathway that leads up through all the grades, and is completed only there. Now, I believe it would be well, thoroughly, grandly well, if all the children could follow that pathway from beginning to end." (See "Social Problems," by M. J. Savage, Boston, 1886, p. 149.

This seems very much like assuming that if all the children could be more thoroughly schooled by a system which tends towards uniform mental results, mankind, having at length lost their diversity of faculty, would still remain civilized.

‡ "Twelfth Annual Report of the Board of Education of Massachusetts," p. 37.

SUMMARY OF WRONGS INFLICTED BY THE COMMON SCHOOL SYSTEM.

The mind which thus conceived the effect of this system to be necessarily wholesome because it was the intention that it should be wholesome, could not possibly be apprehensive of any danger in uniform books and uniform methods. Such minds are not apt to consider, that among free people, exactions from one man or set of men to support the children of another man or set of men can have any elements of wrong in them, or that there can be any element of wrong in substituting the State's interference for the true paternal duty of the father of the family. Nor do they see that there will be likely to be a weakening of the bond of paternal love, and at the same time a loosening of the bond of citizenship, through the assumption by the State of the father's duty. Nor will they be likely to apprehend that, in their "ridicule" and "rebuke" of the father they are casting contempt upon political liberty. Nor do they see anything wrong in seeking to bring the father and the child under the criminal law for resisting such interference with the natural and true paternal relation.

MANN'S METHODS SIMILAR TO THOSE OF MEDIÆVAL PRIESTS.

Mann had no more doubt that he was right than had the mediæval priests, and he was therefore ready to assert the power of the State in behalf of his system and to exert any means that, as he said, were not absolutely criminal, just as the mediæval priests employed the power of the State to enforce the assumptions of the Church. And so he sought to exercise absolutism under the form of democracy. He doubtless would have resented with indignation any imputation of the narrowness or intolerance of Puritanism. Nevertheless he had simply rejected the shell and was retaining the substance. Thus one may fancy himself to be a freeman, and yet, in dealing with his political equals, possibly unconsciously to himself, be seeking to exercise over them a despotism. While assuming superior knowledge of the laws of nature, he is thus asserting this knowledge by a breach of those very laws. A large degree of the evil done in this world is from the vicious notion of a sense of one's duty to exert a power which has no foundation in right, but for which a right is assumed in some supernatural way.

WRONGS INFLICTED BY FREE PUBLIC SCHOOLS RECAPITULATED.

I therefore repeat the thesis, that it is an assumption and not a right by which a majority does the initial wrong of reaching into the pocket of one citizen and taking part of the fruits of his industry, in order to accomplish the second wrong of thrusting the arm of the government into the family of another, to lift from his shoulders the paternal duty; and then to do the third wrong of attempting to substitute for that paternal duty the process of making the minds of children uniform. The process is founded in injustice; it is against equal liberty; it is against the fundamental law of nature, and therefore it cannot work a permanent good. With all of its assumption of beneficence it turns out to be a sin against civilization.

THE COMMON SCHOOL SYSTEM IS SOCIALISTIC.

The advocate of the State's control in the common-school system reasons directly in the line of modern socialism. He cannot logically find fault with the socialist, since between them there is only a difference of degree and not of kind. Both start with the belief that a majority in a free government has the right to take from one man the fruits of his industry and give them to another man who has not helped to produce those fruits. Exacting from one citizen the means to educate another's child is only a modification of the process of exacting from one to furnish bread to another. This system only illustrates the assumption of the power to take all the fruits of human industry and to divide them, not in accordance with the rule by which they were acquired, not in recognition of any degree of skill, energy, or thrift, but by distributing these fruits to thrifty and thriftless alike, and calling such a distribution an equal one. It is a process which makes the government a huge, mysterious, asomatous concern, endowed with omnipotence to accomplish physical and moral impossibilities.

In the case of the common-school system, these evils are so hidden that they are imperceptible to most people, and even when they are perceived they seem, to many, to be greatly overbalanced by what appears to be the resultant good. Let us see whether this is the case. If the father of a family has any duties of maintenance and education to perform for his children, does the government by its artificial interference in undertaking to perform these services for him improve his sense of duty? Does it enlarge his sense of responsibility to his family when it takes a part of that responsibility from his shoulders? And what is, if possible, more important to the well-being of society, does the artificial education — given, not in accordance with individual adaptation, but by an unbending rule — necessarily benefit the object of solicitude, the person assumed to be educated? When the recipient of this mis-education is sent forth into the world, if, as is surely not impossible, he is educated to a distaste for the work which lies about him, is it to be wondered at, that he should look to the government for further assistance? Has he not some sort of warrant for his expectation that the government which has already extended personal assistance will continue it? If this government has made him less capable of doing for himself, why should it not furnish to him an occupation congenial to tastes which it has created in him? Or else, why should it not furnish to him the means of subsistence, since it has made him less capable of finding them for himself? Then why should it not seize the fruits of industry with the same paternal hand by which it before seized part of them, and make a new distribution? Wherever, as Mann puts it, "under the providence of God our means of education are the grand machinery by which the 'raw material' of human nature is worked up," these means are a machinery set in motion to bring out a more or less artificial product. While the industrial incentive may be stimulated by some element of discontent in the individual's existing condition, yet there is a point at which discontent produces nothing but hopelessness. There are kinds of artificial education, therefore, which defeat their object: and those which aim at uniformity are of such kinds. Place a man by such education face to face with what is unattainable to him and he is educated away from his natural aptitudes. You have taken from him the ambition to acquire, and have thus given him a burden to carry with him through life. You may make a tramp or a wild theorist of him; but the work of life for which he was fitted by nature remains undone so far as he is concerned. Instead of being a producer, he becomes only a consumer; instead of a promoter, he becomes an interrupter of civilization. He adds to the number of those who surcharge the activities instead of increasing them. These are but some of the results of the artificial procrustean method; and even if we assume that such methods of instruction may be improved by adaptation to the individual case, yet there are fatal vices which still remain in the system. The principles of equal justice and equal liberty are violated in the exaction by which the system comes into being, and by marring incentive through performance by the government of a duty which belongs to the individual. These principles cannot be taught in any school created by government aid, because there is a necessary violation of them in the very establishment of the system which produces such school. The true incentive of the freeman can never be cultivated where self-dependence is violated by taking the duty from the shoulders of him who should perform it and placing that duty where it does not belong. As long, therefore, as the common-school system, even under any reformation that may be made in its educational methods, remains a State system, exacting the fruits of labor and marring the incentive both of the parent and of the citizen who is taxed to school the parent's child, it cannot be wholesome, for it necessarily mars that which Carlyle has aptly called the highest of all human possessions: Self-help. In view of all this negation it may naturally be asked: "Is education to be abandoned? Are the children to be permitted to grow up in ignorance? Are the negroes with their defective sense of duty to be left to themselves to go backwards?" But the answer to it all is that real education in a free State must necessarily rest upon the fundamental principles of freedom, the equal right of the individual, and of the preservation by the consensus of freemen of the equal incentives of life. It is by his surrounding conditions that each man is individually stimulated to emulate his neighbor, and not by legislative mandate, not by any artificial process which undertakes through mechanism to make him as good as his neighbor. It is the conditions about him which move him to skill, and the incentive cannot be supplied by any other means. Similarly it is his surroundings which stimulate a man to better education. The motives which impel the individual to this accomplishment arise from a disposition to better his position. They are spontaneous; they come from within. They arise from his sense of necessity — imparting to him an ambition to advance his children beyond his own accomplishment, and yet in this advancement to preserve the paternal relation. No artificial means can supply this motive.

THE EFFORT OF THE INDIVIDUAL PARENT THE ONLY HOPE OF THE RACE.

The only source, therefore, to which we can look for the improvement of the race through education or any other means is that which comes from the effort of the parent, promoted by his surroundings, in behalf of his child. Here the growth is healthful; it is based upon the principles of a free government and upon the natural relation of parent and child. It may be helped by the suggestion or persuasion of others, or it may arise, as I have said, from the necessities of surrounding circumstances — those great agents of spontaneous growth,— but no man-made system can create or force it, and the whole office of a free government is fulfilled in preserving the surrounding conditions in accord with natural laws. No man can have his incentive stimulated by the effort of the government to do that for him which it is his first duty as a citizen to do for himself. Not only can normal incentive not be thus stimulated, but it can never be created by governmental compulsion.

When, then, the advocate of the modern educational methods says, for instance: "As we have given the negro his freedom, we must therefore take charge of his education," the proper answer would seem to be that the negro has not received his freedom so long as any part of the people, under the authority of the government, coddle him with paternal care; that he can only have his freedom when he has equal right assured; that is only a freedom to him when it is freedom to do for himself, and that this cannot be assured by the assumption of any superior political right to control or direct him, even though such control or direction be intended for his advantage. By the amendment to the Constitution the negro was brought within the terms of the common agreement for political equality. It is for all the parties to that agreement to see that this equality is recognized as well on account of the negro as for its preservation to all.

When such advocate undertakes to point out what we owe, the natural inquiry is, who are the "we" upon whom this assumption of duty rests? So far as can be discerned the term designates a set of people who fancy that those who are called "the masses" are in some way their wards; that they have a duty derived, not from the common agreement, but from Heaven, by which they assume to make these "masses" think and act not for themselves, but in certain lines prescribed by their assumed political superiors. It is this class constituting the "we" who took the negro after the war and undertook to keep him under a kind of servitude by protecting him through a paternal government; who, presumably for his own good, sought to teach him dependence upon the government for everything and dependence upon himself for little or nothing; with the utmost benevolence of motive they undertook to make for him a social equality by enacting a law for this purpose. They established a bank for him, which collected his earnings, and permitted them to be abstracted. They threw around him artificial conditions which prevented him from realizing that he must depend upon himself to establish his freedom. They sought to make him vote properly,— which meant that he should vote as they would have him; and whenever he resented this effort, they tabooed him as an ingrate. They sent well-meaning citizens to live with him and educate him into dependence. Just as the sense of duty arose in their breasts their views of his true freedom declined. When at last, after repeated efforts followed by failure, the Southern States were thrown upon themselves to work out their problem as self-governing republics, the freedman's condition underwent a change. Whilst it must be confessed that in many respects he has not obtained his full right; that there are many instances in which he has fared illy enough in his efforts at self-preservation and self-dependence, nevertheless, I think no one can make a dispassionate comparison between his condition under the paternal hand of the government and that condition which has existed since this paternalism ceased, without concluding that whatever acts of injustice have been committed against him, his condition has improved and that he has steadily moved towards self-dependence through the lifting of the hand of the paternal government from him. Thrown upon his own resources, there was nothing for him but to depend upon himself, and with the spirit of self-dependence that has therefore grown he has gained largely in individual freedom. His value as a citizen is far better appreciated both in its political and in its industrial aspects, the recognition of his political rights is far more vivid than when the government undertook to direct his industries and to create for him social rights. This growth is exhibited everywhere in the strength of the negro himself; and it constitutes one of the most pregnant comments upon the failure of govermental paternalism.

Notwithstanding the failure which has characterized this paternalism, notwithstanding the bettered condition of the freedman, the superserviceable efforts at his protection have not ceased. They still continue in the effort to employ the surplus which has been exacted from the industries of the nation, in the pursuit and enlargement of this false system of education. The effort is but an example of the disposition of paternalism to return to the field of its past failure, to pursue in a modified form those means which in the past have produced results the very opposite to those which were intended.

INCREASE OF IDIOTS AND INSANE, DUE TO COMMON SCHOOLS.

Turning to statistics we may observe that, so far as they can be taken to indicate the influence of the common-school system upon the moral, the physical, and the industrial growth of the country, they are not reassuring. I do not mean to say that all untoward results are chargeable to the common-school system; most evils are to be attributed to mixed and multiplied causes. Nevertheless, as this system has been direct and potent in the artificial moulding of the human faculty within the past fifty years, I think it may fairly be said that if in that time there has been a continued lowering of the standard of civilization, a part of the responsibility for the progress in this direction must be attributed to it. If there has been a marked increase, in the proportion of idiots and insane to the proportionate growth of population noticeable in those States in which the free-school system was most extensively organized and operated, a part at least of the fact of this growth may appropriately be attributed to the influence of this system. If there has been a notable increase of discontent in the industrial field, any artificial condition which would tend to produce disturbance of the normal incentives, which would tend from its qualities to produce discontent, would probably have its share of responsibility for that discontent; and when the State has by a system cultivated dependence instead of clearing away the hindrances to self-help, it is reasonable to expect to find in statistics some of the effects of this process.* In a natural order of things it is necessity which stimulates man to labor, and when this necessity is removed by the State, the stimulus ceases to operate. The same law which in indiscriminate alms-giving tends to increase pauperism, also operates in causing all artificial efforts which interfere with incentive to produce a deterioration of it. We have for some time been slowly coming to realize that distributing doles indiscriminately to the poor tends to the creation of professional paupers; but we have not yet come to realize fully this same tendency as applicable to what we call education. We are apt to fancy that the same law does not prevail in both cases; but this is because in the latter instance its operation is more indirect. It does operate, however, and if more insidiously and indirectly, all the more dangerously and at last the more potently on that account; and it is with a view to show this working that I present these statistics. The poor girl whose capacities and taste tend to make her an efficient servant for the household, cannot justly be educated to play the piano, since such education only tends to give her a dislike for earning her livelihood; in place of incentive, it produces inaptitude and discontent; and it is repeated instances of this which tend to swell the volume of existing discontent. We may reasonably look to statistics to indicate these violations of principle.

I am well aware that conclusions derived from a comparison or contrast between the census of one decade and that of another are not to be unreservedly accepted. One who has taken an important official part in gathering government statistics tells us that not all statistics are to be relied upon; that there is a class of facts which, from the nature of things, can rarely be ascertained with accuracy. He places those which relate to physical, mental and moral conditions in this class.† I am aware, too, that it has been shown that in the State of Massachusetts the statistics of important criminal institutions comprised in one census were not comprised in another; a circumstance which led to mistakes by those who have endeavored to make deductions by comparison.

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* Mr. Joseph B. Marvin, of Washington, makes the following deductions from an examination of the United States censuses from 1850 to 1880:

"Comparison of the statistics of the defective and delinquent classes in the United States for the period from 1850 to 1880 with the statistics of the public schools for the same period, disclose a certain distinct and uniform reciprocal relation between the number of defective and delinquent classes and the number of public-school attendants.

"During the period from 1850 to 1880 the school attendance a little more than doubled, while the number of defective persons — idiots, insane, blind, and deaf mutes — was five times as great in 1880 as in 1850.

"In New England, where the ratio of school attendance has been the largest, the ratios of defective and delinquent classes have been the largest.

"Although the ratio of the defective classes to the population is still the greatest in the New England States, yet this ratio has only trebled during the thirty years between 1850 and 1880, while it has quadrupled in certain Western and Southern States where the ratio of attendance in the public schools has increased most rapidly in that period.

"The ratio of idiots and insane to the population is greater in the State of Vermont than in any other State in the Union.

"The ratio of paupers is greatest in New Hampshire.

"The ratio of criminals in prison is greatest in Massachusetts."

† "Problems of the Census," an address before the American Social Science Association, by Carroll D. Wright, President of the Association, Saratoga, Dec, 5, 1887,

PRISON STATISTICS.

There is another class of statistics which is derived from a record of some of the State penitentiaries, showing the characteristics, extent of common schooling, antecedents, and occupations of the prisoners. There is some inadequacy doubtless in the usual deductions from these also, due to the fact that the data in themselves are not sufficient to show with exactness the influence of schooling upon the criminal classes, because in order to show this accurately it would be necessary to know the proportion which exists in the State between the schooled and the unschooled. These statistics are, notwithstanding this, important as showing the proportion of convicts who have learned trades and the proportion who have attended public and private schools; and in this respect, it seems to me, the figures are both impressive and significant. The criminals in the State penitentiaries are likely to represent fairly the general criminal class; and the statistics concerning them are likely to indicate some of the influences of educational methods in this connection. The reports from the Eastern Penitentiary of Pennsylvania seem to furnish more complete and detailed information than those of any other penitentiary in the country, and it is to these therefore that I will mainly refer. The report of the Board of Inspectors of this penitentiary for 1886, says:

"Of the 552 convicts received during the year, 373 had attended public school, 104 attended private school, and 75 had never attended any school.

"Of the 553 convicts received, 39 had acquired trades by apprenticeship, 10 were apprenticed but left before time expired, and 503 were unapprenticed. Of the 503 unapprenticed, 62 learned trades by working at them, making 101 who were in possession of trade, and partially instructed in handicraft knowledge, leaving 451 entirely ignorant of any trade knowledge. Of the 537 males received 299 were idle at the time of arrest.

"This examination will disclose the very large number of young persons convicted of crime. It will also show the number sent to 'public schools', to private schools, and those also who never attended any school.

"Of the whole number of persons convicted under 25 years of age, few had been instructed in a trade.

"When it is known that in the city of Philadelphia a million and a half of dollars are yearly expended for public schools, it is extraordinary that no carefully prepared system for teaching the hand is established, while so much is disbursed for mental instruction.

"From January 1, 1877, to December 31, 1886—ten years—there were received from Philadelphia County 1,160 convicts who were 25 years of age and under.

"Of the 1,160 received, 911 attended public school, 103 attended private school, and 146 never attended any school.

"Of the 1,160 received, 136 had trades by apprenticeship, or working at them; 1,024 had no knowledge in handicraft.

"Of the 1,160 received, 832 were idle at the time of arrest."*

This Board of Inspectors, in another of their reports say:

"The young convicts who have acquired what is called a plain education in schools, but have no trade knowledge or training, are yearly increasing in number. This is a startling exhibit. It invites the most serious consideration. It is manifest that efforts must be made to prevent it. It opens for the reflection of the sociologist grave questions,—so grave as to demand inquiry into the real causes that produce these results.

"That this is by no means a new question, arising out of crude thought, or from occasional connection with some branch of crime treatment, the annexed extracts from the report of the penitentiary are given.

"The report for the year 1876 contains the following:

"The number of unapprenticed but educated young men, educated so far as what is called popular education instructs those who receive it, who were sentenced for crime to this prison during the three years 1874–75–76, is so utterly disproportioned, that it may be surmised that 'school education' does not teach the use of trade knowledges."*

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*"Fifty-Seventh Annual Report of the Inspectors of the State Penitentiary for the Eastern District of Pennsylvania," Philadelphia, 1886 pp. 4, 5 and 6.

I have given these statistics for the purpose, more than anything else, of showing the contrast between the character of the promises which the originators of the system made for it and the manner of fulfillment of those promises in the practical workings of the system after fifty years of trials; and conceding them to be inconclusive in themselves, I do not depend on them as the basis for my argument against the system, but regard them merely as incidental to an examination of the theory of the structure.

WHAT MANN PROMISED AS THE RESULTS OF THE SYSTEM.

Mann promised at the beginning that his system would produce a diffusion and equality of the fruits of industry and the establishment of political, social, moral, and intellectual well-being. He promised with great confidence that with the common-school system in active and successful operation "the dark host of vices and public crimes which now embitter domestic peace and stain the civilization of the age might in ninety-nine cases out of every hundred be banished from the world." He describes a state of affairs where institutions of learning and religion are reverenced; where falsehood, detraction, and perjury are never uttered; where neither intemperance nor the guilty knowledge how to prepare its means nor the guilty agents to diffuse them are known; where all the obligations growing out of domestic relations are sacredly kept; where offices always seek the wisest and best men for incumbents and never fail to find them; where witnesses are true and jurors just; in fine, where all men are honest in their dealings and exemplary in their lives, "with the exception of here and there an individual who from the rareness of his appearance would be regarded almost as a monster."† He describes this as a condition, which in the opinion of "our most intelligent, dispassionate, and experienced teachers" could, in the course of two or three generations, and through the instrumentalities of good teachers and good school superintendents, substantially be realized.

THE ACTUAL RESULTS.

For fifty years his system has been in existence; it has had an ever-widening application and an ever-increasing support from the taxes of the people. The most significant statements of its present condition in brief are those of the superintendents of education in several of the States where the system has been longest in existence and is most actively employed. One of these is from the report of the secretary of the State Board of Education of Connecticut. His statement is evidently not made with the view of showing the failure of the system, but simply as a narration of facts. The most significant import of these facts, if we may judge from the context, is not realized even by the writer. He says:

"In every town of this State there are children growing up in ignorance and vice who have failed to receive the minimum schooling which the law requires. There are very many more, as the statement with regard to attendance shows, who attend irregularly and with little advantage to themselves and with positive injury to the school. There is, even where schools are attractive, continuous, and efficient, the most astonishing indifference, developing into evasion, where gain can be made from the labor of the children. These sixteen years of trial and work under a so-called compulsory law have not educated the people who need education to the necessity of every-day training in school. The principle has been lauded, but practice has been wanting.

"Even in the very quarter in which, through vigorous persuasion and action of the efficient State agent, a measure of success has been secured, a serious drawback has developed. Most of those who desire to work attend school three months in order to be able to secure employment, and for no other reason. * * * Such a grave weakness in our education machinery may well fill every mind with alarm, for it points to the unhappy conclusion that the children are losing their rights and the tax-payers wasting their money."

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* "Fifty-first Annual Report of the State Penitentiary for the Eastern District of Pennsylvania, for the year 1880," Philadelphia, pp. 26 and 27.

The reports for other prisons, although not so complete as those for Pennsylvania, so far as they exhibit the details, indicate the same condition of things.

Thus, of the 1,494 convicts in the prison of Joliet, Ill., 151 are classed as illiterate, while 129 are college graduates, and 1,087 have fair education; 127 can read but not write.

In the Minnesota prison, out of 235 prisoners received, 185 had no trade, while only 35 were reported as illiterate.

Iowa has recently reported 489 convicts, 305 of whom had no trade knowledge, 348 of whom had common schooling, and only 53 of whom were illiterate.

† "Twelfth Annual Report of the Board of Education, together with the Twelfth Annual Report of the Secretary of the Board," Boston, 1849, p. 96.

I do not believe the author of this means to convey the idea that the children are losing their rights in the sense that their freedom is being taken away from them, or in the sense that they are being made poorer citizens by the influence of the system; for it is evident that he ingenuously infers that these children are losing their rights in not being dealt with by a more strict police authority. It is evident that he does not realize that the remedies which he suggests lie in the direction of the Inquisition.

The Superintendent of Public Instruction for the State of New York, in his report for the year ending August 20, 1886, says:

"From the data in our possession it seems that 59 per cent. of the school population attended the public schools at some time during the year; in 1880 it was 62 per cent., and in 1870 it was 69 per cent. The average attendance, taking the entire year together, was 36 per cent. of the children of school age; in 1880 it was 35 per cent., and in 1870 it was 32 per cent. The average time each child attended school during the last year was 22.1 weeks; in 1880 it was 20.4 weeks, and in 1870 it was 17.6 weeks. From these figures it is apparent that while the children who do attend the schools come with greater regularity than formerly, still the whole number who attend the schools for some period of the year, in proportion to the whole number of school age, has been growing smaller since 1870, notwithstanding the 'Compulsory Education Act' enacted in 1874. * * * It is believed that these figures are reliable, with perhaps this exception: There has been no census since 1880, and the number of children of 'school age' reported since that time has, undoubtedly, in some cases, been estimated. The estimate cannot, however, be far out of the way."

I have heretofore said in discussing the corporate power and the theory of protection, that whenever legislation creates an institution which is in essential antagonism to equal political freedom, it becomes necessary in support of that institution to call into being other legislative creations for the continued maintenance of the artificial conditions. This is the only sense in which paternalism may properly be called progressive. Nothing is more logical than this kind of supplementary work; nothing lies more directly in the line of cause and effect; and nothing better illustrates the inherent vices of paternalism. In a retrospect of the free-school system, we notice that in its earlier stages, when it was met by an instinctive resentment on the part of the individual, and therefore failed as a spontaneous development, the next logical step lay in the direction of compulsory legislation. This has been in force for some time. In many of the States, as it fails to perform its office, we find recommendations for additional enactments in the compulsory direction. An instance of this is shown in the following statement, made by the Superintendent of Public Instruction for the State of New York. In his report for 1886, he says:

"If we are to believe the word of other States which have preceded us in grappling with the problem here presented, a State reform school to which the most flagrant cases might be sent would have a wholesome moral influence upon the first class above spoken of, and a system of free text-books would materially lessen the number of absentees consequent upon the indifference of parents. The legislature once passed a bill providing for a State reform school for truant children, which failed to become a law because of the objections of the Governor."*

Upon this point the following suggestions are made by the same superintendent: "(1) That provision be made for the annual enumeration of all the children of school age in the State. (2) That the laws for compulsory education be fully revised, and some officer designated in each town to see that they are strictly enforced."

It will thus be seen that the whole system is gradually being transferred to the police department of the government, and will finally owe its existence to the enforcement, under the criminal code, of penalties fixed upon the performance of the duties growing out of the natural relation between parent and child."†

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*From the report of the Hon. A. S. Draper, Superintendent of Public Instruction, New York, for the year ending August 20, 1886, contained in the "Report of the Commissioner of Education," Washington, 1887, p. 43.

†In New York the acts of 1874 and 1876 require attendance, but no effective steps have been taken to enforce these laws. See U. S. Commissioner's Report for 1877, p. 175; also for 1885–86, p. 33.

California enacted a compulsory law in 1874; Connecticut in 1882; Illinois in 1883;

DANGERS MENACING LIBERTY, FROM LOSS OF INDIVIDUALITY BY CITIZENS.

It has frequently been noticed that one of the chief untoward results of the influence of steam and machinery in modern civilization consists in the repression and loss of individuality. Whilst there is no doubt that this is in a great measure true, and that such repression is unquestionably a misfortune, it is certainly a greater misfortune that instead of endeavoring to counteract this tendency by intelligent means we are aiding it by other artificial agencies. There is not wanting evidence that the very great change which has taken place in the German character — a change which inclines the German towards Socialism, and which has been so progressive in the last fifty years — is due to the compulsory and rigorous military and educational methods to which the youth of Germany are subjected; and that the decrease of individuality exhibited in France is due to a like cause. The French nation never had that degree of individual vigor which has characterized the Teutonic and the Anglo-Saxon races for ages, and the course of circumstances in France has tended to the deterioration of the little they had. Church and State together subdued the individual. At the beginning of the French Revolution the people knew nothing but that they were miserable. Their individuality was so completely broken down, that when they came to express opposition it was not by a revived individuality, but through that which Taine calls a "spontaneous anarchy"* coming from a homogeneous mass. Whilst, as I have before said, the Anglo-Saxon race has more vitality and individuality than any other, it is not impossible that a course of systematic repression of this individuality may accomplish its destructive result in time; for the Anglo-Saxon's individuality, great as it is, has of necessity its limit. We should ask ourselves whether, in testing the capacities of the race to assimilate as we are, other races which come as immigrants to our country, we are not, by the mechanism of the common-school system, impairing our capacity to bear the required strain.

LIKENESS BETWEEN THE ROMANIST OF LUTHER'S DAY AND THE COMMON SCHOOL ADVOCATE OF TO-DAY.

We can easily believe that a Romanist, living during the early stages of the Reformation, accustomed as he was to the workings of a unified faith handed down from his fathers, and preserved by the central authority of the Church, beheld with the utmost horror what to him seemed to be the lapse of humanity into spiritual chaos, arising from the surrender of this faith to individual conviction. He could not bring himself to conceive that his truth could be any other than a unit, or that any concession to individual conviction could be any other than a spiritual degradation. Similarly the firm believer in the common-school system looks upon it with a like reverence, and therefore regards any effort to modify it in the direction of individual freedom, as tending towards unquestioned political and moral degradation. He believes in virtue, but he has no confidence in any guard for virtue in which he has not a hand. As it was heresy to believe that so sacred a thing as truth should, in compliance with political freedom, be left to be governed by individual judgment, just so it is doubtless heresy to the advocate of the common-school system to believe that education should be left, in compliance with the same political freedom, to be governed by individual incentive and the sense of paternal responsibility. The mode of reasoning is precisely the same in the two cases; it began with the Romanist in the assumption that his dogma was all there was of truth, that it was the only truth, and that it could have no error in it.† The advocate of the

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Maine in 1875; Massachusetts in 1873; Michigan in 1871, repealed it in 1881, and re-enacted it in 1883; New Hampshire in 1871; New Jersey in 1874; Ohio in 1877; Vermont in 1867; Wisconsin in 1873. There is also a compulsory law in Rhode Island, the date of which is not given. (See U.S. Commissioner's Report for 1882–83, p. xxx, and Report for 1885–86, p. 150.

* "History of the French Revolution," by H. A. Taine, vol. I, chap. 1.

† There are those who found their faith in the common-school system upon a dread of the encroachments of Romanism. Whilst it is doubtless well for a people aiming to be free that they be jealous of any religious institution which tends towards proselyting the citizen, and leading him from the principles of freedom, it cannot be a logical step for such a people to seek to counteract these evil tendencies by imitating the methods which prevail in the obnoxious organizations. The chief means by which the downfall of Romanism in England was accomplished were the secularization of the Church and of politics, and the institu-

common-school system assumes it to be the one true system, and asserts that there can be no possible error in it. Each has thus with the same assumption justified his ends. As we have seen, when the assumption of the unity of spiritual faith, born of the authority of the Church, was utterly broken down, thereupon freedom, both secular and religious, received a new impetus, and a new and enlarged civilization resulted. So it seems to me that when the artificial methods which interfere with the incentives of life, with the natural family relation, shallbe abolished, we shall experience a like enlargement of moral, industrial, and political freedom, and a still better civilization. But, in order to take this step, we will have to realize how easy it is to mar the incentives of a child by the application to his mind of artificial methods unadapted to those incentives; how easy it is to produce by such means a discontent with one's lot in life; how much easier it is for all of us to fall into habits of indolence and thriftlessness than to acquire those of industry and thrift; and we will have therefore to realize that no rigorous rule can be made which will be suited to diverse capacities; that we can no more depend upon a paternal government, and an artificial method for the accomplishment of a wholesome secular education, than we formerly could depend upon the paternal hierarchy for the accomplishment of spiritual welfare. The ultimate attainment of a civilization must, of necessity, rest at last upon the recognition of the individual right, and of the fact that all incentive grows from within, and cannot be created by enactment; that we cannot, in the effort to maintain the standards of life, expect artificial agencies to create the moral initiative; that we cannot disregard the more potent influences of surrounding circumstances upon character; that we can depend no more upon a paternal government for freedom than we formerly could upon a paternal hierarchy. I confess there is no fair prospect for immediate or near realization of this hope. While no array of statistics nor any argument from principle could ever have convinced the early Romanist to whom I have referred, that the concession of individual right in matters of belief was anything other than a surrender of all that was sacred and true, so no array of statistics nor any argument from principle can be expected to convince the advocate of the common-school system that a dependence upon individual freedom with the consequent diffusion of incentive for the support of such freedom is the only basis for normal growth. This system is too deeply rooted in the minds of the people, as was unified faith under ecclesiastical domination; and it is therefore altogether likely that we shall have to await its removal by dynamic influences similar to those which broke down forever the supreme authority of the Church of Rome. ("Industrial Liberty," pages 286-336.)

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tion by this secularization of methods of free thought, which were entirely opposed to the paternal authority of the Romish Church. The most efficient means possible for overcoming any untoward growth of that Church to-day, are those which cultivate the individuality of the citizen; and these means cannot be effectively employed whilst there exists an organization which systematically represses this individuality. Romanism must always be expected to make its least progress in a country where the paramount idea consists in guarding the individual freedom. It is far less likely to flourish in a free country, kept free, than in any conditions where its methods of authority are imitated. The effort to form the human faculty and the effort to form the human conscience originate in the same notion of authority, and they are alike out of accord with the principles of individual liberty.

IX.

MR. BONHAM'S INDICTMENT AND CRITICISMS CONSIDERED.

By I. Edwards Clarke.

In treating of the common schools, Mr. Bonham, we have seen, uses them as an illustration of the methods of a paternal government and opposes them, primarily, because he is opposed to all paternalism in government. His other objections to the schools themselves will be noted in due course.

He instances the common schools as "third" in his list of the acts which characterize a government as paternal. In defining, however, those acts which a government can do without becoming tainted with paternalism, he says: "A government is not paternal * * * second, in undertaking to do those administrative acts for the whole public which may not be done by the individual, but which are necessary for the whole public advantage, and which therefore conduce to the well-being of all the citizens."

If this cause was before a judicial tribunal it would seem perfectly proper for the judge to issue an order to Mr. Bonham to appear and show cause why, under that definition, the support of free common schools should not be included in his list of those acts which a non-paternal government may do.

Not only the free common schools but the whole system of public education from the public Kindergarten to the State University with its many professional and technical schools, would be included under his provision.

It is just for the reason that provision for the education of all the children of the community is beyond the ability of individuals, that the community undertakes it; and, further, it is because the need of some elementary education of the children is so essential to the well-being and safety of the community, that the community is justified in undertaking it. Were our author convinced of the truth of these two propositions, he must enroll free common schools in his list of permissible actions along side "the prevention of interference by the criminal and defective classes with the industrial and political rights of the citizens,"— which is his euphemistic expression, for the support of a police, jails, asylums and hospitals,—as a perfectly proper exercise of power by a non-paternal government. The public has come to the conclusion that public schools are efficient aids to, and in large measure substitutes for, police and soldiers.

In objecting to the State control, as exerted in the maintenance of common schools, Mr. Bonham further argues that such an exercise of power can only be regarded as "socialistic," as an arbitrary seizing of the property of one citizen for the use of another. It is clear that whatever of validity there is in this argument must apply equally to any other tax collected by the State in its corporate capacity. All community action is, in that sense, "socialistic." The difference between the government of the Czar of Russia and that of the most idealistic conception of the most advanced "Socialist"—

not "Nihilist"—is as truly as in the comparison Mr. Bonham adduces, "only a difference in degree."

The indispensable preliminary of all modern civilization is found in the existence of a common fund, contributed by individuals for community use. Where highways, bridges, public buildings, protection against evil men, or against fire or flood, are involved, the absolute necessity that individual citizens should combine for common purposes is readily recognized. If, then, the community decides that the claims of public education are as valid as are the needs of public highways, public police, etc., then the charge that a tax for the purposes of providing such education is an unjust burden upon individual citizens, will no more justly lie against that portion of the public revenue devoted to the providing of public schools, than against any other application of public funds to the needs just enumerated.

The advocates of public free schools may safely and readily concede that the tax for their support is to be justified on precisely analagous grounds with those imposed for other recognized public needs, and they may properly be asked to show that the public benefit derived from free common schools is commensurate with the expenditure of public money caused by their support.

The friends of the free public schools can not fail, however, to resent with honest indignation any such unjust imputation that in their advocacy of free common schools supported by the public they are thereby inciting the public officials to any acts of injustice in the spoliation of the property of private citizens; which is the gravamen of this charge adduced by Mr. Bonham and those enemies of the free common schools whom he represents.

In his endeavors to attribute to the advocates of free common schools a wish to arbitrarily divide the property of the prosperous members of the community with the idle and unproductive members, and so, by calling the educators "socialists," to arouse prejudice against them, Mr. Bonham seeks to confuse and blend two essentially different factors. He assumes that to give free education to the children of the people is the same thing as to distribute among the idle the property stored up by the industrious, without in any way compensating the producers. This very thing is, however, done by all communities in the establishment of poor-houses, hospitals, and prisons, whose inmates are also fed and supported at the cost of the industrious, producing citizens, and Mr. Bonham himself includes these among the expenditures which may be made by a non-paternal government; directly, when he specifies the care of "disabled" soldiers and sailors; and inferentially, in the reference to "the criminal and defective classes" quoted above.

The money raised and appropriated for the free public education of the children of the community, comes, properly, neither under the head of money given in charity to the poor or sick, or expended in punishing the guilty; that is, for the cost of police, courts, and prisons, which expenditures are incurred for the protection of the community from the depredations of the vicious.

It is not an equal division among all, of the products of the labor of some; but it is a communal investment for the benefit of the commune; since the fact is universally admitted that intelligent workers and citizens directly promote the prosperity and growth in wealth of the community, and that, in no other way can a modicum of intelligence be made universal; so that expenditures by a community for the elementary training of all the children, are analogous to those made by farmers in the purchase of seeds, of draught animals, and of agricultural implements; expenditures which are repaid many fold by the increase of production which they make possible.

The free common schools then are clearly not "charity" schools, any more than the public streets, walks, lights of the town or city, are to be reckoned as charity:

Mr. Bonham characterizes this common school system as a three-fold "sin against civilization" in that, first: it takes the property of one to educate the child of another; second: in that it wrongfully interferes with the rights and duties of the individual parent; and third: that it makes the minds of the children uniform. The two last accusations are, in fact, as absurd and utterly without foundation, as the first one is fallacious. Those who are familiar with the working of the free public schools throughout the United States know perfectly well, that their influence is not to weaken the love and respect of the children for their parents, and secondly, that the danger arising from too great uniformity of training is not likely to be of serious import, so long as the years of school life are so few, and, above all, so long as the educators themselves are as alert and watchful as the present wide-spread movement for industrial training shows them to be.

This attempt to charge that the school system is a species of "socialism" in the obnoxious meaning of that term, directs attention to the fact that the trend of modern civilization is ever in the direction of an increasing variety in the kind of enterprises undertaken for the public by their authorized agents; which multiply in almost geometric ratio, as science develops. The characteristics of modern development are at the present, markedly in the direction of the combined forces, and united action, of large numbers of individuals.

The contrast between what was done at public cost, for the comfort and convenience of the citizens, a century ago; and what is done to-day, is most impressive. The increased expenditure by the community now undertaken for various purposes, is sufficiently illustrated by that now thought necessary for improved public roadways and for the public parks, lights and water supplies of towns and cities. What further development of this phase of "communism" the near future may show, no man can safely predict.

Let any great calamity, caused by earthquake, volcano, pestilence, fire or flood, fall upon a city or community, and instantly the civilized world makes haste to give aid. The recognition of the universal brotherhood of man thus called forth in behalf of unknown people, by some sudden catastrophe, is but an indication of the growing consciousness of the solidarity of the human race. An increasing sense of the duty of public provision for the education of the young is but a natural consequence of this recognition of how the welfare of each one is bound up in the welfare of all. The dangers that threaten the preservation of individual freedom of action and development, if, as of old in Sparta, the public interest assumes preponderating importance, are indeed manifest and real; it was probably a vivid consciousness of these perils to the personal liberty of individuals which led to the writing of this treatise by Mr. Bonham.

To pessimistic observers it doubtless seems, at times, as if the dangers menacing industrial and individual liberty were overwhelming; but, as of old "out of the strong came forth sweetness;" so, out of all the turmoil and confusion incident to the breaking in of these new forces of nature to be the ready servants of men, the indomitable spirit of man shall, Samson like, wrest new and grander opportunities for self development and individual liberty.

As universal intelligence lifts the race upon higher table-lands of thought; the lofty mountain peaks of aspiring human intellect, which have never, since recorded history began, been wanting among men, shall pierce still higher the bright empyrean; while, secure along their wooded slopes, besides their life-giving streams of heavenly wisdom, more lowly men shall rejoice in a larger liberty than the past has ever known.

When our author comes to consider the claim for the schools, as aids in the advance of civilization, he very pertinently questions whether the book training given is as potent a civilizing force as industrial training would be; well, as the present Report very clearly shows, the schools are now moving forward to give also this industrial training which he suggests; which in no other way could be given so universally and so thoroughly. Passing from this, he proceeds to his more formal statement of objections:

First, the unequal exactions from citizens for the support of schools. This has been answered by the cheerfull assumption by most communities of this school tax as their best insurance for the stability of society and the preservation of property.

Second, that a government should not arbitrarily "assume a father's duty."

In point of fact, in no American community is this done. Parents have the fullest liberty to give their children whatever educational training they may desire. All the community does is to furnish facilities for free public education for those who desire to avail themselves of such opportunities. The community only insists that a minimum of education shall be given to the child; thus protecting the rights of the child, that is of the coming generation, as being of at least equal importance as are the rights of the parent; that is, of the passing generation. That in regard to the question of the wisdom of so-called "compulsory education" pushed to an extreme, the present writer does not seriously differ from Mr. Bonham, may be seen by referring to pages CXIII–XV of Part I. of this Report. In the same chapter some reasons why public free schools should be supported are incidentally stated.

Mr. Bonham's "Third" objection is that the State seeks by these schools, artificially "to unify those faculties which nature has made diverse."

It is not proposed here to go into anything like a full reply to, or even an exhaustive criticism of, Mr. Bonham's accusations. His objections are, in effect, more ably answered in the papers of this Appendix which precede his paper, than they could possibly be by any original arguments which the present writer could hope to set in order. It seems proper, however, to call attention to some statements which are most unfair towards Mr. Mann and his purposes. The general tenor of the book is so dispassionate and just, that this seeming exception must be attributed to a misconception on the part of the author when referring to certain of Mr. Mann's statements.

Our author does not fail, however, to render full justice to the pure character and exalted ideals of Horace Mann. He concedes the greatness and goodness of his motives.

On the other hand, he seems to have strangely misconceived the situation and conditions by which Mann was confronted and which he sought to improve; as well as the purposes he sought to effect. Neither parental instinct nor public sentiment, in the Massachusetts of that day, had been sufficiently awake to the need of educating the children to provide a supply of school-houses, teachers, or school books, in any respect adequate to the needs of the community. These were all to be provided out of one man's heart and brain. Something of what Howard had effected for the alleviation of prisoners in the fetid jails of England, Mann undertook to do, and successfully achieved, for the school children of Massachusetts; for a large proportion of the too few school houses were then utterly unfit for occupation. Houses, books, teachers, had all to be evolved, and before these were possible a general interest in education had to be created.

To a generation accustomed to the stately school buildings which now tower in every city, town, and hamlet, and to the vast array of school teachers, the multitude of school books and the armies of school children, which, to-day, constitute one of the most striking features of American town life, the conditions which confronted Mann can hardly be conceived. His words, his efforts, his successes, should be measured by their relation to his surroundings.

There were few male teachers, and had there been a sufficient number, the money to pay for their services could not have been procured; so Mann established a precedent, which in a later day, under similar pressure of need, was followed by Secretary Chase when, during the war, he first opened the doors of the Treasury Department to women clerks. Mann bethought him of the expedient of employing female, in place of male teachers; since they could be had for greatly diminished pay. He might, therefore, fairly be held responsible for the present somewhat undue preponderance of women teachers in the schools of the United States.

Our author, ignoring all these actual conditions with which Mann was contending, takes issue with his utterances and demands, as if they were made under the conditions of to-day. It is only just to bear in mind that when Mann began his work there were, in Massachusetts, no recent emigrants; the people were all descendants of the original settlers, and Mann's prophetic words were based on those conditions. It also appears that the improvement which directly resulted from Mann's earliest efforts fully justified his anticipations. The Massachusetts Free Schools were an admitted success even in his own lifetime. If this success has not been followed by the results he hopefully portrayed it must be remembered that a flood of emigration from Ireland, and from Canada, has since been poured in upon Massachusetts; dispossessing the former inhabitants and substituting, in place of the children of school-taught New Englanders, the progeny of untaught Irish and French Canadian peasants.

Mr. Bonham, in his "third" objection, assumes that Mann sought to achieve a uniform result, that he intended to turn out his pupils all of one pattern.

The very opposite was Mann's ideal, as it seems to me. What Mann sought of uniformity was only what was essential to the effective teaching of the elements of knowledge to pupils in classes. It has been proved beyond cavil that classes of twenty or more children can be taught by a single teacher at the same lesson, the forms and sounds of the letters of the alphabet, or of figures, as readily and as effectually as can a single scholar. In order to do this, however, the children must all take the same lesson at the same time. To do this, they must have a common place of rendezvous and similar books containing the same lesson; therefore, public school-houses, uniform text-books and competent teachers must be provided. None of these essential conditions and means existed when Mann began. Is it not unfair to infer that he proposed to turn out pupils as like as peas, because he desired the same spelling books and arithmetics for the elementary pupils?

While it is very possible that to-day, when all the machinery of popular education exists in such abundance in most communities, there may be danger of too much uniformity in methods and too little recognition of individuality on the part of inexperienced teachers;—so recently themselves "girl graduates;" and while every effort should be exerted to avoid that tendency; still, it seems hypercritical to draw such an accusation against Mann.

Mr. Bonham would doubtless reply, that this situation is the logical result of the system; and so, as Mann was the father of the system he is responsible for this result. It may be suggested that so wide is the diversity of gifts, of temperament, of character, that to obtain any such uniformity, if it were desirable, would be found impossible.

In the paragraphs following the sentence on page 37 of Mann's 12th Annual Report,* to which Mr. Bonham refers and from which he quotes, but hardly ingenuously, it is clear that so far from seeking to produce by the training of the common schools a uniformity of result, a single type of intellect, or to induce a mere mechanical method of instruction, as Mr. Bonham would have his readers infer, Mann sought to give to every phase of intellect the fullest opportunity of individual development. He says "by means of early education those embryos of talent may be quickened, which will solve the difficult problems of political and economical law; and by them, too, the genius may be kindled which will blaze forth in the Poets of Humanity;" and he continues in this strain to recount the several fields of mental activity for which these common schools shall train and develop workers.

Horace Mann was evidently quite as well aware as is Mr. Bonham himself of the value of a "differentiation of faculty" to that development of the human race which is indicated by the term civilization; and surely nothing was further from his purpose than to establish a procrustean system by which the children should all be turned out of a uniform pattern.

Mann's idea was to give to every child the alphabet of knowledge, in order that his native powers might be developed to their fullest extent. Were these powers not more favorably conditioned when the child was made able to read than if he had been left in utter ignorance? But, says Mr. Bonham, his parents should see to that; not the State or community. Well, what if, as was often the case, the parents were themselves too ignorant to know of this need of the child, or too penurious to meet it, or too indifferent to care? Must the child and the community be left helpless and hopeless to endure all the consequent evils? Yes, says Mr. Bonham. No, say all American communities and most native-born citizens.

The premise being that, in a Republic, all male citizens of legal age shall, by voting, take part in the selection of the legislators and executive officials, it follows that it is clearly for the interest of the

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* For the full text of these paragraphs see *ante*, page 549.

State that these voters shall possess a certain amount of knowledge, that, at least, they shall be able to read the names of those for whom they vote, and the laws made by the legislators they have chosen. Now, in no country known to history has the "duty of the parents to educate their children" by private effort been so universally performed as to secure anything approaching such a general prevalence of even the small amount of elementary knowledge which this presupposes. A strict carrying out of the plan advocated by Mr. Bonham, would simply result in the education of the children of a certain proportion of wealthy parents, while there would be an ever-increasing class of children of the poor, growing up in ignorance, because their parents, appealed to by the imperative needs caused by hunger, nakedness, and exposure to the elements, that is the necessity common to rich and poor alike, for food, clothing, and shelter, could find little opportunity, even if they recognized the duty of so doing, for providing for the remoter needs of the child for schooling.

The necessity that the community should provide for the free education of all children, if education is to be general among the citizens, is the more evident when it is recalled that in no country has any single generation ever been able to provide for the education even of its wealthy classes, but everywhere the great institutions of learning have been the recipients of the bounty of generations, and are themselves the product of the slow growth of centuries; further, it should be noted that private benevolence has never attempted to educate people in general; its streams of wealth have gone, for the most part, to endow and enrich those schools and universities which are sought by the children of the rich. To this, in our day in America, there have been some notable exceptions, and in former ages charity schools were founded from time to time, but in neither case was there any attempt even to provide adequate opportunities for the mass of the people.

Only a people can educate a people.

If the people of the United States should then conclude to follow Mr. Bonham's implied advice and, abandoning their free common schools, relegate the duty of educating the children wholly to the individual parent, the people must rapidly fall lower and lower in the scale of intelligence.

The children who now have fewest home advantages would be the first to suffer. In view of continuous immigration, and considering the desirability of having a homogeneous population in this vast country, it would seem incredible that such a proposition could be seriously suggested.

While pleading for the increased liberty of the individual and protesting against the insidious dangers to freedom of any form of paternalism in governments, Mr. Bonham and his fellow theorists would remit coming generations of Americans to mediæval conditions, and raise up a community more hopelessly divided into classes than were the people of France in the days before the French Revolution; for, as our author forcibly portrays elsewhere in his book, the tendencies resulting from the discovery, and application to industries, of the marvellous forces of steam and electricity, lead to the concentration of capital and of power in control of the great corporations; which, at present seem alone capable of managing and directing these Titanic powers.

While eloquently urging in his opening pages the need of protecting industrial and individual liberty against the despotism of these corporations, it seems somewhat paradoxical that he should, a little further on in his book, argue, as he does in this chapter, against the only method of general education for a whole people which has ever proved successful.

Certainly a large proportion of ignorant people in the population of any country,— and this, if the light of history is of any value, would in a couple of generations at farthest be the case in the United States if the free schools were abandoned,—would furnish poor security for the protection of personal liberty against such powerful oppressors.

In this chapter our author makes two assumptions, and argues from them as if they were axiomatic; whereas they are wholly gratuitous on his part and wholly unwarranted by the facts. In the first place he assumes and asserts that the advocates of free common schools set up their system as a perfect one—while it is universally known that the severest critics of the methods of these schools are the educators themselves, who are continually seeking better methods. Secondly, he asserts that Horace Mann sought to force all human intellects into the same mould. Nothing could be more erroneous than to attribute such an idea to this great educator.

Mann thought, rightly, that the varied powers of the individual would have the opportunity of development, if he could be started on the road of investigation and could know how to find, for himself, what the race of men had accomplished. The unfairness complained of is that it is assumed that Mann sought absolute uniformity as the beginning and end of all mental training.

Such nowhere appears.

Mr. Bonham frequently repeats the phrase "artificial education" as a charge against Mann and free schools. What would natural education be?

Is not all formal training of the intellect of man "artificial" and arbitrary, in that it is inevitably, at the beginning, imposed on the individual by some one older, more powerful and wiser than the pupil?

"The principles of equal justice and equal liberty are violated" by the free school system, says our author. Many modern economic writers have. in like manner, much to say about justice and liberty. Well, where is this equal and exact justice to be found? And this absolute, individual liberty, they prate of; where, pray, may that exist outside of a Savage State?

Civilization and society are only possible when the individual consents, or is forced, to give up an undeterminate portion of those personal rights and that freedom of action, which each individual might properly enjoy under other conditions; and the progress of civilization is marked by a constant endeavor to so adjust these claims of the individual and of the community, as to secure the best results for each and all. The free common schools are a striking instance of such endeavor on the part of civilized American communities.

Where, as in the United States, there is no restriction on the opening of any private or corporate institutions of learning, or in the freedom of attending such institutions, the "principles of equal justice and equal liberty" so far as the free schools, or enforced attendance upon them are concerned, do not seem to be in imminent peril. While the danger of producing in the children of a whole community a monotonous mental uniformity, through the methods of instruction used in the free common schools, cannot be very great, even if, which is by no means admitted, the tendency of these schools is as Mr. Bonham suggests; since so many other schools, and methods, are available.

There is, however, an important though unfortunate fact to be recalled in this connection, which goes far to diminish the urgency of this last suggested danger, and that is the shortness of time during which the large majority of children attend these schools. The "uniformity" which most seriously threatens the welfare of the community is, alas, an uniformity of ignorance!

Recognizing, in one breath, the existence of complex causes, Mr. Bonham in the next, inclines to hold the schools alone responsible for certain unfavorable social phenomena.

In the New England States, especially in the State of Massachusetts, the scene of Mann's activities,—the native American population has been largely displaced, or, rather, succeeded, by a continuous inflowing of people of foreign birth; a promiscuous immigration of French Canadians, of Irish, and of Germans, whose education, such as it may be, was certainly not received in the public free schools of America. This change of population with all its resulting consequences can hardly fairly be ascribed to the evil influence, or failure of the common schools. Nor, on the other hand, can any failure of the good results to the community to come from the introduction of the common school system, as portrayed in advance by Horace Mann, be ascribed to any inherent weakness of that system; since this dislocation of population has changed all the conditions. The justification of Horace Mann's confident predictions is to be found, not alone in his native State, but, "if you seek his monument," traverse the mighty States and Territories of the great free North and West, that stretch athwart a continent, from the gray rocks and barren sands beaten by Atlantic surges, to where the waters of the far Pacific mark the bounds of Empire; and, "see," everywhere "about you," set in smiling fields of plenty, or amid the clustering roofs of prosperous towns and cities, the frequent buildings given to common schools for the children, and the hospitable porches and friendly towers of the free Universities;—the acknowledged safeguards of the Great Republic!

The full glory of the day that Mann foresaw, made possible by his plan of universal education, may, like the realization of the pure ideal of Christianity, be far distant; but, to free schools, and free bibles, American civilization owes all the victories it has won in the incessant combat with the hosts of ignorance and barbarism, ever recruited in countries where free schools are unknown; and from lands where tyranny, poverty, and hunger, drive forth the thronging people. Were there no free common schools, in which to train the children of these alien people into a knowledge of American citizenship, the fate of the Europe overswept by the Huns of Attila, would soon be paralleled by that of these United States.

There may be found in the statistics of penitentiaries, which are put forward by Mr. Bonham in this chapter, some arguments in favor of the more general introduction of some forms of industrial training in the schools; but, otherwise, they fail in pertinence, and hardly merit serious attention.

The amazing endeavor thus made to force an appearance as of cause and effect, between the schools and the growth of the defective and delinquent classes, from the fact that the free common schools were in existence during the same years in which the decennial census returns, from 1850 to 1880 inclusive, show an increase in the ratio of such defective and delinquent classes in the United States, recalls, by the grotesque absurdity of the attempted analogy, Fluellen's famous argument to prove the likeness between the country that had the honor of giving birth to "Alexander the Pig" and the county in Wales where King Henry Vth, was born,—"*Fluellen*, I think it is in Macedon where Alexander is porn. I tell you, captain, if you look in the maps of the 'orld, I warrant you s'all find, in the comparisons between Macedon and Monmouth, that the situations, look you, is both alike. There is a river in Macedon; and there is also moreover a river at Monmouth; * * * 'tis alike as my fingers is to my fingers, and there is salmons in both." To *such* conclusive demonstration there can, of course, be no refutal.

Increasing accuracy in collecting and tabulating statistics, in succeeding years, is one cause of a greater apparent increase in given classes than really exists; the difference of ratio being largely due to former inefficient and inaccurate enumeration.

But nothing can be more absurd than, in our present state of knowledge and ignorance as to the myriad of remote or direct causes of insanity, idiocy, blindness and deafness, to impute an apparent increase in their number to any single cause.

Surely, to charge this increase as a result of the teaching in the public schools would argue against any form of education, as forcibly as against that given in the free common schools. The great increase in population, the great addition by immigration of unknown families who may be, by heredity, predisposed to these defects, the great increase in wealth and of demands of living, the increased excitements of life due to the incidents of the wonderful material development of the age; and, more than all, the fact that whereas formerly all such cases in country families were secluded, kept secret as much as possible, because considered as a disgrace, they are no longer so regarded; that the community now know of a larger number of such cases is, therefore, by no means conclusive evidence that there has been any actual increase in their relative number. But any effort by implication to hold the free schools of the people in any way responsible for these classes, seems hardly worthy of serious refutation.

The penitentiary statistics, which are given, when analyzed, would seem to show an exactly contrary state of affairs than those which the author intended them to show.

We take, for example, a part of the quotation from the report of the Pennsylvania Eastern Penitentiary for 1886: "Of the 552 convicts received during the year, 373 had attended public school, 104 attended private school, and 75 had never attended any school." This looks bad for the free school pupils you will say, but let us consider the ratio,

In Philadelphia in 1884–85, 105,000 children were registered as in attendance on the public schools, and 18,000 in private and parochial schools—which is certainly a good showing for the public schools; since, to equal the ratio of criminals graduated from the private schools, there should be some 520 from the public schools, instead of only 373! But such statistical comparisons are of little value. These particular statistics could, perhaps, serve to show inferentially the practical value of industrial training; as more than four-fifths of these convicts were ignorant of any trade and manual employment.

Further investigation into the statistics of the nativity of the inmates of prisons and penitentiaries, so far from strengthening our author's implications against the public schools, furnish, by inference, decisive arguments in their favor; since it appears that the large majority of these representative members of the criminal classes are either of foreign birth, or foreign parentage; the foreign immigrants, of course, have not as a class attended the American public schools; those born here of foreign parents are also quite as likely to have attended the parochial schools, if they attended any school.

From the striking summary of the resources and present conditions of the United States, and of the impending perils that menace the future of our country, given in the little volume prepared by Dr. Strong and issued by the Home Missionary Society,—* a book which all true lovers of their country would do well to read and ponder,—the following paragraphs, relating to statistics of prison population, are copied:

> Our population of foreign extraction is sadly conspicuous in our criminal records This element constituted in 1870 twenty per cent. of the population of New England, and furnished seventy-five per cent. of the crime. That is, it was twelve times as much disposed to crime as the native stock. The hoodlums and roughs of our cities are, most of them, American-born of foreign parentage. Of the 680 discharged convicts who applied to the Prison Association of New York for aid, during the year ending June 30th, 1882, 442 were born in the United States, against 238 foreign-born; while only 144 reported native parentage against 536 who reported foreign parentage.
>
> The Rhode Island Work-house and House of Correction had received, to December 31st, 1882, 6,202 persons on commitment. Of this number, fifty-two per cent. were native-born and seventy-six per cent. were born of foreign parentage.† While in 1880 the foreign-born were only thirteen per cent. of the entire population, they furnish nineteen per cent. of the convicts in our penitentiaries, and forty-three per cent. of the inmates of work-houses and houses of correction. And it must be borne in mind that a very large proportion of the native-born prisoners were of foreign parentage. [Our Country, p. 41–2.]

In this connection the statement of "an experienced jurist, Judge Butler," which recently appeared in the columns of The Philadelphia Inquirer, is apropos, since he is there reported to have said: "I have had over thirty years' experience, and, judging from my own knowledge, more than two-thirds of the crimes committed in this country are committed by foreigners."

It would seem, therefore, that the communities that support free public schools do *not* furnish to the prisons anything like so large a proportion of convicts as do those countries which have no system of free schools for the common people. No valid argument against the soundness of the principle of a free public school system can be fairly drawn, inferred, or implied, from the prison statistics of the United States.

The further objection urged by Mr. Bonham, namely: that the training given in the free schools often leads to dissatisfaction with present conditions, can hardly be urged as valid to Americans.

It is only in lands where castes divide the people with rigid lines, that discontent with one's condition in life can be disadvantageous. It has been and is the glory of America, that all paths of life are open to all. It is well if the boys or girls born of ignorant, shiftless or dissipated parents are discontented with their lot, and can be spurred on to higher things!

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* Our Country: Its possible future and its present crisis. By Rev. Josiah Strong, D.D., General Secretary of the Evangelical Alliance for the United States. With an introduction by Prof. Austin Phelps, D.D. (with motto from Emerson). One hundred and Fifteenth Thousand. Published by The Baker & Taylor Co., 740 & 742 Broadway, New York, for the American Home Missionary Society. Pp. 229.

† For additional statistics on this point, see North American Review, January, 1884.

But the most glaring instance of unfairness occurs in the use made of the quotations from the report of the School Superintendent of Connecticut, wherein the fact is lamented that there are still many children in the State growing up in ignorance because not permitted or obliged to go to the free schools; "losing their rights," that is, "rights of education" of course; but our author sees only that their 'freedom' is to be taken from them by forcing them to go to school.

However, the culminating charge against the whole system, is, that, after fifty years of Free Common Schools, the condition of the community is far short of the ideal pictured in his enthusiasm by the visionary Mann. This must be admitted; but, before the future, thus pictured, can be called wholly "visionary," it must be shown that the pre-requisite conditions have been complied with. No one conversant with New England and especially with Massachusetts, can for a moment question that the advantages accruing to the community, arising directly from the existence of the free common schools he founded, have been incalculable.

Christianity, Civilization itself, Republics, any form of ethics, of government, of philosophy, of religion, tried by the test here applied to the system of popular education inaugurated by Horace Mann, would show far greater failure. It is an assurance of the continued progress and development of the race, that mankind are able ever to conceive a nobler ideal than can at once be realized in fact; but, the higher the ideal, the grander the accomplishment; and Mann's ideals may well have been heavenly, since their partial embodiments have been so beneficent.

Yet, despite these statements as to the free common schools which seem to us so unjust and fallacious, this writer, elsewhere in this striking volume,—which, whether the reader agree or disagree with the propositions advanced, is certainly provocative of thought,—calls attention to many of the principles which must underlie all true progress.

He returns to a consideration of the primal bases of Human Liberty, and makes many pregnant suggestions in view of the present confusion of ideas; caused by the rush and out-pour of so many new forces and applications of force; which, in myriad forms and by countless impulses, affect and change, not only the outward conditions but the innermost thoughts and aspirations of mankind. If, in his arguments, he may seem to force the individual into too great prominence, it must be remembered that the whole trend of progress at this Era is towards an ever-increasing subordination of the individual, not only to the State; but to artificial corporations created by the State. Human Freedom, on which alone true progress can be grounded, is only possible where the rights of the individual and those of society, "the State," are alike secure.

APPENDIX J.

PAPERS

RELATING TO

THE KINDERGARTEN

AND TO ITS INFLUENCE UPON

ARTISTIC INDUSTRIES.

I. INTRODUCTION.
II. The Kindergarten in its Relation to the Fine Arts and to Industries.
III. "The Indentification of the Artisan and Artist," an address by Cardinal Wiseman, with "a Plea for Fröbel's Kindergarten," by Elizabeth P. Peabody.
IV. Kindergarten Methods and Their Development in relation to Industrial Art Education, by Miss Emma Marwedel, 1875–1889.
V. The Kindergarten discussed by some English and European Educators at the International Conference in London, England, in 1884.
  (*a*) "What Fröbel did for Young Children," by Miss Manning.
  (*b*) "The Kindergarten in Relation to a Country's Industries. Fräulein Eleonore Heerwart, M. F. D. H.
  (*c*) "Value of the Kindergarten System to Young Teachers." Remarks by Mr. Severn.
  (*d*) "Infant Schools under the Code of 1884." Alfred Bourne, B. A.
  (*e*) Discussion. Remarks by Mr. Rowland Hamilton.
VI. The Kindergarten considered by some American Educators.
  (*a*) "Free Kindergartens," a paper read at a Conference in St. Paul, Minnesota, in 1886, by Constance Mackenzie.
  (*b*) The Kindergarten in relation to Public Schools. A report by A. P. Stone, Esq., School Superintendent, Springfield, Massachusetts, in 1886.
  (*c*) Opening Address by W. H. Hailmann, PH. D., of La Porte, Indiana, before Kindergarten Department, National Educational Association, Chicago, 1887.
  (*d*) "The Value of Kindergarten Training in Normal Schools." Miss Clara A. Burr, of Oswego, New York.
  (*e*) "Kindergarten Methods in Primary Schools." Miss Kate L. Barton, of Boston, Massachusetts.
  (*f*) "Kindergarten in the Education of the Blind." Miss Eleanor Beebe, Institute for the Blind, Louisville, Kentucky.

THE KINDERGARTEN MOVEMENT.

I.

INTRODUCTION.

The methods of the Kindergarten are considered by many as the very beginning of Industrial and Artistic training, which should mark the entrance of the child upon whatever course of education may be adopted in later years. In many places a demand has arisen that Kindergarten be established as the lowest elementary grade of the public schools. The following papers, show the relation of this method of training to general education, especially to artistic and industrial training, and embody the views of many well known American and foreign educators.

The first of these, and the most important in its bearing upon the art education of a people, relates not only to the limited phase of industrial training, to the discussion of which much of the present volume of this Report is given, but to the far higher ends which are comprehended in the purpose of this Report as a whole.

The grace of style, the interest of the subject matter, and the pertinence of the practical applications to the needs of this Nineteenth century, by which the eloquent Cardinal converges the many striking illustrations of classic and mediæval customs, drawn from his copious stores of learning,— blending Archeology, Biography and History,— into a lesson for use in the life of to-day; while they can not fail to charm the most careless of readers, may also serve to keep in remembrance the great object for which this special work was first undertaken. This purpose, distinctly set forth in the first volume of this Report, is an endeavor to promote the artistic development of the American people; to show the intimate relations existing between artisan and artist in the best ages of art; and to aid in the establishment of such an era in this free Republic.

As showing the relation between the most elementary training of young children in the Kindergarten and the exercise of the higher forms of art in its most exclusive signification, as well as in its myriad applications to the uses and adornments of life, and the direct relation of all the arts to labor and to laboring men and women, the fact of this publication, by Miss Peabody, of Cardinal Wiseman's admirable address as an introduction to her plea for Fröbel's Kindergarten, is interesting.

As tending to harmonize the sometime conflict between the advocates of High Art, pure and simple, and the advocates of Art in all its applications to Industry; I know no wiser words than these eloquent ones spoken by the Cardinal, nor any better way of presenting them to the attention of my fellow-countrymen than that adopted by the excellent lady who will long be remembered as one of the earliest and most enthusiastic advocates of Kindergarten in the United States, and who, as the readers of the chapter on the early evolution of Drawing in Part I of this Report will recall, is well entitled to recognition in a work of this character, by reason of her early efforts in connection with her gifted sister, the wife of Horace Mann, to introduce and popularize the study of drawing in schools; — long before the beginning of the modern movement that brought Professor Smith to America.

The brief paper by Miss Marwedel, who at that time had a successful Kindergarten in Washington, D. C., urging the value of the Kindergarten work as preparatory to the graded course of drawing proposed by Walter Smith, was an outcome of the first visit of Professor Smith to Washington in 1875.

Since this paper was written Miss Marwedel has been for some years engaged in successful Kindergarten work in California, and has herself elaborated a "system," embodying a Scheme for Educational Art training, beginning with Kindergarten and continuing through all the grades of schools. Miss Marwedel went during the summer of 1887 to Germany to have the plates of illustrations prepared; the water color originals for the illustrations of the science teaching of the older pupils, which she had had made in California, and which were shown to the writer just before her departure for Germany, were very elaborate and beautiful. Although copies of some of her recent works have been received while this volume is in the printer's hands, her brief statement, written so long ago, and interesting from its connection with Walter Smith, is here retained.

Miss Marwedel returned from Germany in 1888, and, in July, 1889, published a preliminary pamphlet entitled "The Missing Link," in which certain methods of children's knife-work in pasteboard, and wood, as used in two typical schools in Sweden and Saxony, are described. This work is, in her judgment, better adapted than is the wood Slöjd, of Nääs, for continuing and developing the Kindergarten occupations, and for connecting them with those of the Manual Training High School. Extracts from each of these recent publications by this devoted disciple of Fröbel, are also given.

Selections from the reports of educational conferences which follow will be found, it is hoped, to comprise a body of valuable and authoritative material relating to this subject. They include extracts from the report of the papers read and discussions held concerning Kindergarten during the International Conference in London in 1884, which serve to show the estimation in which this form of the elementary education of young children is regarded by English and European educators; a similar collation of the opinions of American educators, during an educational conference held in St. Paul, Minnesota, in 1886; a special report upon the adoption of Kindergarten in the public school systems, made by Superintendent A. P. Stone, of Springfield, Massachusetts, in 1886, and referred to on page 133 of this volume; and extracts from the report of the proceedings during the sessions of the Kindergarten Department of the National Educational Association at the annual meeting in Chicago, Illinois, in July, 1887, with which this Appendix ends.

II.

THE KINDERGARTEN IN ITS RELATION TO THE FINE ARTS AND TO INDUSTRIES

One of the most interesting literary incidents connected with the early efforts to introduce Fröbel's ideal infant schools into American communities was the republication by Miss Elizabeth P. Peabody of the lecture of Cardinal Wiseman on the inter-relation existing between the Fine and Industrial Arts, as an introduction to her earnest plea "addressed to American workingmen and to educators," for the adoption of the Kindergarten as the first grade of the primary schools.

In thus linking the beginnings of Industrial Art Education with the record of the supreme triumphs of Art, so admirably and eloquently set forth by such a master of literary art as is the distinguished English Cardinal, Miss Peabody, whose publication antedated by a year the arrival of Walter Smith in Boston, has shown that this much talked-of movement for the general introduction in all public schools of the study of industrial art drawing, and the further movement, based on this knowledge of drawing, for general instruction in the schools in the elements of mechanical industries, must needs be matured into a logical, progressive system;—must be looked at as a whole, and not undertaken in a partial, fragmentary way. It is only by such comprehensive treatment that the new movement, to the account of which so much of this volume has been given, can justify itself educationally; or can be undertaken with any reasonable prospect of permanent success.

But it is not alone to educators that this address of the Cardinal appeals. Its most emphatic words are to the so-called "artists," *par excellence*, the workers in the Fine Arts, whose active influence was long exerted in direct opposition to any movement to introduce generally any elementary knowledge of drawing and of art. The records of Haydon's experiences in England, of Peale's in Philadelphia, and the more recent opposition made by some artists in America to Walter Smith and his system, will amply serve for illustration of the kind of opposition referred to.

This opposition on the part of some artists and art writers has largely arisen, as it seems to the present writer, from an entire misconception of the purpose entertained by the promoters of this industrial Art drawing, the introduction of which in the public schools was urged with no reference to the technical training of "artists," as indeed has been sufficiently, and repeatedly, set forth in the pages of Part I of this Report.

There may doubtless be a danger of debasing the high ideals of art by substituting a mechanical method of thought and of treatment. It is to this tendency to "narrow the sphere of art" which, he suggests, may exist "in this practical scheme of education" that the Cardinal calls attention, and in regard to which he utters words of warning.

As these phases of the subject were treated at length in the Preliminary Papers in Part I of this Report, it is unnecessary further to consider them here. It may be of interest, however, for readers to compare what Professor Walter Smith has said upon this subject of conventionalizing all designs with Cardinal Wiseman's dicta upon the same point; as their decisions are diametrically opposed. Professor Smith's treatment of these topics will be found in his remarks on "Household Taste and Principles of Industrial Design." (See pp. 582 to 590 inclusive, Part I of this Report.) The paragraphs referred to, in the address of the Cardinal, occur nearly at the end of his lecture.

As the Kindergarten is gradually coming to be recognized as the proper entrance to the system of industrial education in public schools; so, also, we see that, in Miss Peabody's judgment at least, it is closely connected with Art Education. It follows then that, in whatever aspect this Report is viewed, whether in its relation to art and artistic industries solely; or its relation to the consideration of the best practical education to be given in the common schools of the people, and the higher technical training to be afforded in special institutions; this address, here related to Kindergarten, finds fit place in this Report. The index of Part I shows the references to "Kindergarten" in that volume.

The papers which follow, while they serve to show that these elementary schools are not wholly overlooked, are in no sense to be considered as a full treatment of the subject; which finds admission here, only, as a single step in a long series of progressive institutions designed to promote industrial and artistic education.

III.

THE IDENTIFICATION OF THE ARTISAN AND ARTIST.

A LECTURE BY CARDINAL WISEMAN, REPUBLISHED IN THE UNITED STATES IN CONNECTION WITH THE MOVEMENT TO INTRODUCE KINDERGARTENS.[*]

DEDICATION—TO AMERICAN WORKINGMEN.

By Elizabeth P. Peabody.

I have omitted one sentence of the Report of this great and important Lecture of Cardinal Wiseman's, because, though it may apply to European society, it does not apply to American. The sentence is this:—

"The difference between the social tone of our day and that of a former age cannot probably be overcome. I cannot, therefore, pretend to hope that we shall see the day when the real, honest artisan, who at the same time shows artistic skill as well as industry, will be considered as raised thereby above the condition in which he is at present held."

Had the great Cardinal lived in America, he would not have felt this despair. It is the felicity of the constitution which protects the development of the American nationality, that it quenches no hope of a return (and with interest) of all that the past has intimated of the dignity of man. The events of the last ten years in America have taken away forever the disgrace of work; and there is no motto more befitting every American than Ora et labora (pray and labor). The progress of science and its applications, by making slaves of the great insensible forces of nature, are fast vindicating to human beings the prerogative of all that work which men only, by their individual intelligence and skilled hands, can accomplish; or, in other words, it is making all human labor to rise into the degree of creative genius, which is the intellectual image of God in man. Fine Art, that is, architecture, sculpture, painting and music, are now the forms of this creative activity; but not all, for every form of human activity, even individual formation of character, will become Fine Art when principles of eternal order and beauty, for the use and pleasure of men, shall be embodied in them. The life and manifest destiny of the American nationality is to make every man creative on every plane of his life.

But, in order to accomplish this, men must be developed right from the beginning. Cardinal Wiseman declares, that, whenever in past ages artisans were artists, they were educated to be so. By the Greeks and Romans every production of human intelligence was considered a service done to some god; and the church of the middle ages, after the revival of letters, made every work an act of worship; *i. e.*, every work that only intelligence was competent to. In both cases, education was given in secret societies. But the common-school system of America can more than take the place of those secret societies, and should consider itself the immediate instrument of divine Providence to insure the legitimate honor and social position of an artist to every artisan. But for this consummation, so devoutly to be wished, our education must be reformed from the primary stage, as is proposed in the pages which are appended to the report of the Cardinal's Lecture; and the American workingmen ought to demand nothing less of the Educational Boards in all the States.

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[*] The Identification of the Artisan and Artist the Proper Object of American Education. Illustrated by a Lecture of Cardinal Wiseman, on the Relation of the Arts of Design with the Arts of Production. Addressed to American workingmen and educators, with an essay on Froebel's Reform of Primary Education, by Elizabeth P. Peabody.—Boston: Sold by Adams & Co., 25 Bromfield St., Lee & Shepard, Patrick Donahoe. New York: Wood & Holbrook, J. W. Schermerhorn. 1869. Pp. 48.

THE ARTS OF PRODUCTION AND THE ARTS OF DESIGN.

[In the spring of 1852, an association was formed by the Catholics of Manchester and Salford, in England, to raise funds for the education of the poor. The Committee, in aid of this purpose, invited Cardinal Wiseman to deliver an address upon some literary subject of general popular interest. Accordingly, on the 28th of April last, in the Corn Exchange, Manchester, His Eminence spoke for three hours, as follows. We know not that we have ever read anything so calculated to inspire the true sentiment of Art among the working people. Those who are interested in the establishment of Schools of Design in our country could not ask a better presentation of the importance of their cause.]

Ladies and Gentlemen,— I ought certainly to commence my address to you by thanking you for the extremely kind manner in which you have been pleased to receive me; but I feel that I must not waste your time in mere expressions of a personal character, feeling rather that I shall have to tax your time and your attention to a considerable extent. I will, therefore, enter at once upon the proposed subject of my address, which has already been communicated to you by my old and excellent friend, the Bishop of Salford. And I am sure I need not say, for he already has well expressed it to you, that it is a topic which at the moment has engaged its full share of public attention, as drawing to itself the interest of all the educated classes, and it is in fact a topic connected with important questions, the solution of which may have to exert an important influence not only on our social but likewise on our moral progress.

* * * * * * *

The topic on which I have to address you, then, is the Connection or Relation between the Arts of Production and the Arts of Design.

By the Arts of Production, I mean naturally those arts by which what is a raw material assumes a form, a shape, a new existence, adapted for some necessity or some use in the many wants of life. Such is pottery; such is carving in its various branches, whether applied to wood or to stone; such is the working of metals, whether of gold or silver or brass or iron; such is the production of textile matters,— of objects of whatever sort and for whatever purpose; such is construction in its different branches, commencing with the smallest piece of furniture, and ascending to a great and majestic edifice. By the Arts of Design, I understand those which represent nature to us in any form, or which bring before us beauty, whether in form or in color.

Now, these arts ought, as every one agrees, to be in close harmony one with the other; but that harmony which I wish to establish between them must be an honorable union, an equal compact, a noble league. There is not to be one the servant, and the other the master: each must be aware of the advantages which it can receive as well as those which it can confer. Thus the arts, for instance, of design, will have to give elegance of form, grace of outline, beauty of ornament, to that which is produced by the other class of arts; and they in their turn have to transmit and multiply and perpetuate the creations of the arts of design. Now, it is agreed on all hands that as yet this complete harmony does not exist; that we have far from arrived at that mutual application of the one class to the other which gives us a satisfactory result. It is unnecessary, I believe, to bring evidence of this. As we proceed, I trust that opportunities will present themselves of bringing before you authorities enough for that assertion. But I may say, at the very outset, that the report which is published by the department of Practical Art is almost based upon the acknowledgment that as yet we have not attained that application of the arts of design to the arts of production which we desire, and which is most desirable to the arts of production to obtain. It acknowledges the existence of a necessity for much more instruction than has yet been given. It allows that for several years — thirteen years, at least — of the existence of schools of design they have not been found fully to attain their purpose, and a new organization and a new system has now begun to be adopted. No one can appreciate, I trust, more than I am inclined to do myself, the advantages which must result from the multiplication of these schools of design as applied to manufactures, and other great improvements which they have already begun to confer, and will continue, no doubt, still more to bestow upon the industrial classes.

ALL CHILDREN SHOULD RECEIVE ELEMENTARY INSTRUCTION IN SCIENCE AND ART.

I believe it most important to propagate to the utmost the love of Science, the love of Art. I believe it most useful to accustom every child to its first rudiments, its elementary states. I think, if we can make drawing a part of universal education, a great deal will be gained. But this, certainly, cannot be enough. I am willing to grant that we shall have a great improvement upon what we have produced in the form of Art. I believe that we shall see better designers; men with better imaginations; men who understand the harmony and combination of colors better, and who can give to the artisans patterns which will greatly improve every department of our industry. But, I ask, is that sufficient? Will this bring Art up to what we desire? This is the great question. This is the subject of which I am going to treat. It appears to me that there is a very simple mode of looking at it; and it is the one, consequently, which I shall adopt. It is a question partly of experience. It is a lesson much of which history can teach us; and I desire to bring before you such facts as seem to me to bear upon the question, and to enable us to come to a practical and satisfactory conclusion. [Applause.] I will endeavor to state the question under a very simple, but perhaps it may appear not a very practical, form.

There is now a great desire to form, not only in the capital, but also in all great cities where industry prevails, museums, which should contain all the most perfect specimens of Art antiquity in every age has left us of beauty in design and elegance in form. We wish that our artisans should have frequently before them what may be considered not merely actual models to copy, but likewise such objects as may gradually impress their minds with feelings of taste.

AN IDEAL MUSEUM OF CLASSICAL ART.

Now, I should like to have the construction, the forming, of such a museum. And, in describing it, I will confine myself entirely to one small department,— that of classical Art, classical antiquity,— because I know, that, for a museum intended to be practical to the eyes of artisans, there is a far wider range of collection to be taken than that to which I will confine myself. Well, now, I imagine to myself a hall at least as large as this, and of a more elegant and perfect architecture. I will suppose it to be formed itself upon classical models; and around it shall be ranged, not merely plaster casts, but real marble statues and busts collected from antiquity. I would range them round the throne so that each could be enjoyed at leisure by the student. There should be room for the draughtsman to take a copy from any side. In the center I would spread out a beautiful mosaic, such as we find in the museums, for instance, of Rome, a pavement in rich colors, representing some beautiful scene, which should be most carefully railed off, that it might not be worn or soiled by the profane tread of modern men. There should be cabinets, in which there should be — but inclosed carefully with glass, so that there would be no danger of accidents — the finest specimens of the old Etruscan vases, of every size, of every shape, plain and colored, enriched with those beautiful drawings upon them which give them such rich characters, and at the same time such price. And on one side I would have collected for you some specimens of the choicest produce of the excavations of Herculaneum. There should be bronze vessels of the most elegant form and the most exquisite carving, and there should be all sorts even of household utensils, such as are found there, of most beautiful shape and exquisite finish. On the walls I would have some of those paintings which have yet remained almost unharmed after being buried for so many hundred of years, and which retain their freshness, and would glow upon your walls, and clothe them with beauty, and at the same time with instruction. And then I would have a most choice cabinet, containing medals in gold and silver and bronze, of as great an extent as possible, but chiefly selected for the beauty of their workmanship; and engraved gems likewise, every one of which should, if possible, be a treasure. Now, if such a museum could be collected, you would say, I am sure, that so far as classical antiquity goes,— classical Art,— you have everything that you could desire, and you have as noble, as splendid, as beautiful a collection of artistic objects as it is within the reach of modern wealth and influence to collect. In fact, you would say, if you could not make artists now by the study of these objects, it was a hopeless matter, because here was everything that antiquity has given us of the most beautiful.

OUR PRECIOUS OBJECTS OF ANTIQUE ART WERE SIMPLY THE COMMON UTENSILS OF THE ANCIENTS.

Now, I am afraid, that, while you have been following me in this formation of an ideal museum, you have thought it required a great stretch of imagination to suppose it possible that such a collection could be made in any city of England. I will ask you, then, now to spread your wings a little more, and fly with me into even a more imaginary idea than this. Let us suppose that by some chance all these objects which we have collected were at some given period, in the first century of Christianity, collected together in an ancient Roman house; and let us suppose that the owner of the house suddenly appeared amongst us, and had a right to claim back all these beautiful works of Art which we so highly prize, which we have taken so much trouble, and laid out so much money, to collect. Now, what does he do with them when he has got them back? What will he do with these statues which we have been copying and drawing and admiring so much? Pliny finds great fault, is very indignant with the people of his age, because he says they have begun to form galleries, *pinacothecas;* that such a thing was unknown before; that no real Roman should value a statue merely as a work of Art, but that it was only as the statues of their ancestors that he ought to value them. And thus that Roman looks at them as nothing else. He takes them back; he puts the best of them, not in the center of a room, where it may be admired; but to him it is a piece of household furniture, and he puts it with all its fellows, into the niches from which they have been taken, and where they are, perhaps, in a very bad light. It is exceedingly probable, that, if the statues were not of his ancestors, he would, instead of allowing them to remain in the beautiful hall prepared for them, send them into his garden, into his villa, to stand out in the open air, and receive all the rain of heaven upon them. The mosaic which we have valued so much, and which is so wonderful a piece of work, he will put most probably into the parlor of his house to be trodden under foot by every slave that comes in and goes out. And now he looks about him at that wonderful collection of beautiful Etruscan vases which we have got together, and he recognizes them at once: "Take that to the kitchen: that is to hold oil:" "Take that to the scullery: that is for water:" "Take these plates and drinking-cups to the pantry: I shall want them for dinner." And those smaller, those beautiful vessels, which yet retain as they do the very scent of the rich odors which were kept in them: "Take them to the dressing-rooms: those are what we want on our toilet: This is a washing-basin which I have been accustomed to use. What have they been making of all these things, to put them under glass, and treat them as wonderful works of Art?" And, of those beautiful bronze vessels, some belong again to the kitchen, others belong to our furnished apartments; but every one of them is a mere household piece of furniture. And then he looks into the beautiful cabinet; and he sends those exquisite gems into his rooms, to be worn by his family, as ordinary rings. And your gold medals and silver medals and bronze medals he quietly puts into his purse; for, to him, they are common money. Now, then, here we have made a collection of magnificent productions of Art; and, in reality, these were all the fruits of the arts of production. [Cheers.]

Now, what are we to say to this? We are to say that there was a period in Rome, and there were similar periods in other countries at different times, when there was no distinction between the arts of production and the arts of design; but those very things, which to us now are objects of admiration as artistic work, were then merely things made and fashioned as we see them for the ordinary uses to which we adapt other things of perhaps similar substances, but of a very different form. For, in fact, if you had these vessels, you would not know what to do with them. We could not cook a dinner in them. We certainly could not adapt them to our common wants. But to the Romans they were the very objects which were used for those purposes; and although now, in reading the old writers, and trying to make out the dreadfully hard names by which all these different pieces of pottery are called, yet, learned and classical as all that may be, when we come to translate these high-sounding Greek names into English, we get very modest results,—pipkins and basins and ewers and flagons, and such homely names as these. [Applause.]

ESSENTIAL ART IS INDESTRUCTIBLE.

Now, where is the Art there? Is it that these were designed, do you think, by some man of great reputation; and then that they were all carefully copied, exactly imitated, from his design? Oh! certainly nothing of the sort. The Art that is in these beautiful things is a part of themselves; is bestowed upon them in their fabrication. You may take the Etruscan vase, and you may scratch away from it, if you please, every line which had been traced by the pencil of the embellisher upon it; and, after that, the seal of beautiful design, grace, and the elegance of true Art are so stamped upon it, that, if you wish to remove them, you must smash the vase. [Applause.] It is inherent in it: it was created with it.

Then what I fancy is desired is, that we should bring Art back to that same state in which the arts of design are so interwoven with the arts of production that the one cannot be separated from the other, but everything which is made is by a certain necessity made beautiful. And this can only be when we are able to fill the minds of our artisans with true principles, until really these have pervaded their souls, and until the true feeling of Art is at their fingers'-ends. [Loud applause.] You will see, I think, from the example which I have given you, what is the principle at which I am aiming; which I wish to establish. It is this: that at any period in which there has been a really close union between the arts of production and the arts of design, this has resulted from the union in one person of the artist and the artisan.

Such now is the principle that I am going to develop; and, in doing so, I will distinguish between arts of production belonging to two distinct classes. There are those in which necessarily there is manipulation,—the use of the hand, or of such implements as the hand directly employs; and there are those in which mechanical ingenuity is employed in the art of production. It is clear that these two must be treated distinctly; and I will begin with the first, which affords the greatest number of illustrations and examples, in proof of that principle which I have laid down.

HAND WORK IN METAL.

I will begin first, then, with illustrations from metal work. Now, the period in which there was the greatest perfection in this sort of work, as is universally acknowledged, is from about the fourteenth century,—1300, I think, to 1600, or at least after 1500. It is singular, that, in that period, five at least, very probably more,—but we have it recorded of five of the most distinguished sculptors whose works are now the most highly prized, that they were ordinary working goldsmiths and silversmiths. This is given us in their respective biographies. Benvenuto Cellini, Luca della Robbia, Lorenzo Ghiberti, Brunelleschi, and Baccio Bandinelli, all of whom were goldsmiths and workers at first, developed most extraordinary talent as sculptors. How was this done? Can we conceive a person who is merely a workman, working upon such plate as is put before him, becoming a man of high first-class character in Art? There have been examples, but they are rare. But here we have five men, in a limited period, becoming most eminent. Now, what was the reason of that? It was because the jeweler, the silversmith, who worked with his hands, was educated, not only as an artist, but an artist of the highest class; and Vasari observes, in the life of Bandinelli, that in those times no man was reputed a good goldsmith who was not a good draughtsman, and who could not work as well in relief. We have a principle then established, that the person who did the material work in the finer works was an artist, who could not only draw, but model, and did the same with the metal itself; for that is the nature of that class of work of which I have spoken.

BENVENUTO CELLINI.

Now, take the life of Cellini. Here was a man who originally was put to a totally different employment. His father had no higher ambition concerning him than that he should become a great player upon the flute; and he teased him during all the last years of his life because he had no taste for this, and would run after goldsmiths and others, and learn the different branches of their profession. He led the most wonderful life. He was to-day at Rome; next day at Florence; then he was at Naples; then at Venice; then in France; then back again; that he could have done any work, in fact, seems incredible to any one who reads his life. And he did not travel by train or any public conveyance which could take on his luggage. He traveled on horseback, each time, from Rome all the way to Paris. He had no luggage; he was a poor man, and whenever he came and started his shop, he began by making his own tools; and he worked with his scholars, who were generally young men that became themselves eminent in the profession, in a little open shop, looking to the street; there he himself hammered and carved and cast and shaped, and did whatever else was necessary for the work. He was an actual working goldsmith; and the beauty of his works consists in this, that they have the impress of genius so marked upon them, that they never could have been designed by one person and executed by another. There is as much art in the finish by his own hand, in every enamel, in the setting of every stone, as there is in the entire design; nor does he ever dream of talking of himself in any other way; and yet how he went on from step to step, until at length he produced the most magnificent works, on the largest scale, in marble and in bronze! He describes how he constructed his own Perseus. He went to buy his own wood, and saw it brought; and when he was casting that most exquisite statue of Perseus, which is still one of the wonders of Art, he had every sort of misfortune. His furnace blew up, the roof was blown off, and the rain came in torrents upon the fire just the moment that the metal was going to be poured in. By his ingenuity, his extraordinary contrivances, he baffled, it might appear, the whole chain of accidents, and brought out, almost without a flaw, that most perfect piece of workmanship. You may imagine to what a state he was reduced, when, the very moment that the metal was ready for pouring out, the explosion took place. He had no other resource but to run to his kitchen, as he says, and to take every piece of copper, to the amount of two hundred porringers and different sorts of kettles, and throw them into the fire, and from these that splendid statue came forth. There was genius. [Loud cheers.]

As a curious instance of the most extrordinary ingenuity, he tells us that on one occasion a surgeon came into his shop to perform an operation on the hand of one of his pupils. Upon looking at his instruments, he found them, as they were in those days, so exceedingly rude and clumsy, that he said, "If you will only wait half an hour, I will make you a better instrument;" and he went into his workshop, and took a piece of steel, and brought out a most beautifully finished knife, with which the operation was successfully performed. Now this man, at the time you see him thus working in his shop as a common workman, was modeling in the most exquisite manner in wax: spending his evenings in the private apartments of the Grand Duke, modeling in his presence, and assisting him with a hundred little trifles which are now considered treasures of Art. And so wherever he was, and under all circumstances, he acted as an artist, but at the same time as a truly laboring artisan. It was the same with others in the same profession. He was not the only man, by any means, whose genius was so universal; because we find him telling us repeatedly that the moment he heard of some goldsmith (and in those days a goldsmith was really an artist, as I have already said) who excelled in any particular branch of Art, he determined to excel him. Thus it was that he grew to rival the medals of one, the enamels of another, the peculiar manner of putting foil to precious stones of another; and, in fact, there was not a branch of art which he did not consider it his duty to excel in. With this spirit, is it wonderful that men of really great taste should have been produced; men who, you observe, looked upon every branch of productive art as really a branch of the higher art of design; and thus in their own persons combined that art with the power of the tool; were artists as well as artisans?

JEWELLERS AND GOLDSMITHS OF THE MIDDLE AGES.

There is another celebrated jeweler of that time, whom he mentions frequently, of the name of Antonio Foppo, a Milanese, who is better known in the history of Art by a name which he received in derision in Spain, the name of Capodursa, which means a bear's face, and which he is known by, commonly, in works of Art. Cellini describes to us the processes by which he produces his works; and they are so careful, and require such accurate knowledge of Art, that his knowledge must have been very superior indeed in the arts of design. As an instance of what was the latitude and the extent of Art, and how really a jeweler or goldsmith in those days was not above work which in our days no one would dare offer to a person of such a profession, we have a case recorded in the history of one of the painters, Pierino del Vaga, by Vasari, speaking of a very particular friend of Pierino's, a goldsmith. When the Grand Duke of Tuscany was building his palace, he gave to this man a commission to execute the metal blinds for the ground floor of that palace (and it is considered a great pity that a work of so homely a nature should have perished, because there can be no doubt whatever that it was a work of exquisite beauty). So that, even upon what would be considered the lowest stage of common production, the artist did not feel it was beneath him to design; not to give a design to others, but to execute it himself. We have in the collections, particularly of Italy, in the palaces, evident proofs of the great extent to which this combination of various arts must have been carried, in works exceedingly complicated, extremely beautiful, and at the same time necessarily requiring a great deal of ability to execute. Those are the rich cabinets in which may be found, mixed together, work in marble, and in ivory, in wood, in metals, in enamel, and in painting, all combined together by one idea, and all executed by one hand, but of the authors of which it seems impossible to find any good trace. They probably were produced by those men called goldsmiths, and who, as I said before, could work as well upon any of those substances, and thus bring them harmoniously to form one beautiful whole. [Cheers.]

AMAZING PREVALENCE OF ART WORK IN THE ANTIQUE WORLD.

Now, proceeding from what is most precious in Art to what is more homely, let us return for a moment to a subject on which I have already touched. I have spoken of the beauty of the productions of antiquity in metal, which were found in the excavation particularly of those two buried museums, as we may call them, of antiquity, Pompeii and Herculaneum. The collection of these is chiefly in Naples. Except where presents have been made to other countries, they have been jealously kept together. Now, these different objects have not been dug out of temples or out of palaces, but they have been taken out of every sort of house,—houses evidently belonging to the citizens,—and I think you may see that there is not one in that collection which does not immediately arrest the eye both by the beauty of form and by its exquisite fancy. Many of them have been engraved in the publication called the "Museo Borbonico," the Bourbon Museum, the Museum of Naples; and I think very justly the remark is made by the editor in the fifth volume, that the whole modern civilized world, however vast it may be, and however it may labor in so many arts and so many trades, does not and cannot exhibit even a small proportion of that elegance and ornament, varied in a thousand ways, and in innumerable most fantastic modes, which are to be admired in the remains of furniture found in Pompeii and Herculaneum,—two cities which occupied so insignificant a place in the ancient world. That is quite true. Now, what are we to infer from this? There can be no doubt, as I have said, on examining these beautiful objects, that they have been for common use. There are scales, steelyards, which can only have been made to weigh provisions: the chains are most delicately worked: the weight is frequently a head with a helmet, most beautifully chiseled; and so genuine and true are these, so really intended for every-day use, that one of them has stamped upon it yet the authentication made at the capitol of the weights being just. This was a steelyard which was in the kitchen, and it was for the ordinary purposes of the house. There are other large vessels, which must have served for culinary purposes, and of which the handles and the rings and the different parts are finished far beyond what the finest bronzes that are now made in Paris can equal. What are we to conclude? You do not suppose these were the designs of the Flaxmans and the Baileys of that day. Who ever heard of a great artist in Pompeii and Herculaneum? And how can you imagine that every house furnished itself with what were considered exquisite and extraordinary specimens of Art for the use of their every-day life? And then, where are their common utensils, if these are not they? If these lamps were not what they burnt, if these candelabra were not the shafts upon which they were hung, if these vessels were not those in which they prepared their viands, where are those? Were they carried away in the flight? But the most precious would surely be carried away, and the commoner be left behind. Nothing of the sort. One may see here everything is to be found; and everything is beautiful in shape, and generally in finish. What are we to conclude? Why, nothing less than that the braziers who made these things were able to make them. They came from the hands of the brass-founder: they have been chiseled in the workshop: they have been finished, not to be put up in cabinets, but in order to be knocked about by servants. Then here we have a state of Art in which the producer, the man who makes, who manipulates, who handles, the object of manufacture which he produces, was able to do what now defies almost our most superior workmen. [Cheers.]

ARTISTS AND ARTISANS OF NUREMBERG.

Now let us go to another part of the world, and come to a later period. Nuremberg, during the time which I have specified,—between 1300 and the middle of 1500,—was a center of Art, and especially in all metal work. There is an observation of Hoffman, a German writer, that Nuremberg was the city in which the artist and the craftsman walked most harmoniously hand in hand: but I think he does not go far enough: he ought to have said that it was a city in which the artisan and the artist were the most perfectly combined. At a very early period, that is, as early as 1355, there was produced a piece of work such as is at this day the admiration of all artists. And what was it? It was a mere well, a fountain in the public square; "the beautiful fountain," "the beautiful well," as it is to this day most justly called. Now, this was made entirely by the designer, by the artist himself, Hōfer, who united in himself these two qualities; and it is acknowledged that in the treatment of the metal work, and in the beauty of the religious images which surround this fountain, but few steps have been made in Art since that time. And he, as I observed, was a mere workman: he did his own work. At a later period,—at what is considered the third period of Art, in Nuremberg,—there is another remarkable piece of metal work; and I am glad to find that in the last report just published by the department of Practical Art, Mr. Smirke has introduced a letter in which he begs that this piece of workmanship, which he calls one of the most celebrated productions in metal, may be copied by casts, and brought to England as a specimen of Art. Now that beautiful production was of as early a period as 1506: it was made between 1506 and 1519, and it is the shrine of St. Sebald, in his church at Nuremberg: and no one who had seen that exquisite piece of work:—so beautiful, so elegant, as that no iconoclasm had dared to touch it (though I must say that Nuremberg had been preserved from the reproach of that error),—but there it is, in its freshness and its beauty, as it came from the artist's hand; in the center, a shrine of silver, in which is the body of the saint, and around it what may be called a cage or grating of the most perfect metal work, and with statues of most exquisite workmanship. Now I do wish this to be brought to England,— a copy, that is, of it,— not merely because it will show what was done in ages that we consider hardly emerging from barbarism; not only what beautiful inspirations religion could give the artist; but because it will show to those who are trying to raise the character of any art the true principle upon which alone it can ever be raised to what it was then. They will see the artist portrayed upon it,— Peter Vischer,— they will see him with his apron on; they will see him with his chisel and his mallet in his hand; they will see that he aspires to nothing more than to be a handicraftsman, a workman in metal, who yet could conceive, and then design, this most magnificent production of man's hand. [Applause.]

THE BLACKSMITH OF ANTWERP.

Another example, something of the same sort, we shall find in a neighboring country. There is at Antwerp, likewise, a beautiful well near the cathedral; and if you ask who it was that produced this, you will hear that it was one who sometimes had been known as a painter, and at others, under the more familiar appellation of the "Blacksmith of Antwerp," as a blacksmith; and there is a piece of iron work which I fear that not our most perfect Works could turn out,— certainly not, nothing that could be compared with it. And Quintin Matsys was a poor school-boy, who, finding the heavy blacksmith's work too much for him, took to drawing and coloring little images of saints, to be given out in processions, and thus rose to be a painter and an artist, finding his first profession too heavy for his strength. But this iron work is a work of Art; it is not a work merely cast in the lump, and then put together; but it is a work that required genius, that required great artistic skill: it shows that the artist even worked in iron; that a man who belonged to the very lowest branch of what may be considered the Arts — laboring in metal — was able, notwithstanding, to imagine and to carry out the most beautiful conceptions.

THE ENGLISH ARTISAN OF TO-DAY IGNORANT OF ART.

Now, coming to modern times, do we find anything of this sort? I content myself with referring to that last report which I have just mentioned,— of the department of Practical Art. In that report there are incorporated letters from some of our best silver and gold smiths upon the character of the artistic proficiency of the workmen. I will only read one, for all in reality repeat the same sentiment. "At present we seldom find an English workman who understands drawing. Not one of our English workmen has a knowledge of drawing;" and it is said that, without exception, these men will not even go to the school. Attempts have been made to bring them to the School of Practical Art, that they may learn something of the principles by which the works in their branch of productive art should be conducted. They cannot be induced to go and obtain that information, though it is nearly, or entirely, gratuitously given! So little taste, so little feeling of Art is there in our workmen now! Can we expect they will produce works that will rival those of ancient times? For there is this broad, immense difference: in one, the artist was the workman; now, the workman has only a degree of intelligence above the machinery which he uses! He can apply those means which are put into his hand; but can have no artistic feeling to give the last touch, or even to bring things to ordinary perfection. On the other hand, we must be struck with the difference, that in France there is much more taste, much more knowledge, much more intelligence, in the actual artificer: the exhibition showed, that, though we had magnificent things in silver work, and gorgeous objects in metallic productions, beautiful and splendid, yet, when you came to look at them with the artist's eye, you could not help observing the immense difference between our English productions and those of France; though, be it spoken to the glory of our English goldsmiths, they have both the taste and the generosity and munificence to bring over and to employ the very first foreign artists; and it was thus we did produce some objects that stood in competition, not with those of the workman's rivals, but with those of his own countrymen.

SUCCESS OF A MODERN WORKMAN PRACTICING CELLINI'S METHODS.

In Vecht there is an example of what the artists in old times were. He began as a cotton-spinner; he became a manufacturer of toys; then a button-maker; and then he began to work with the chisel. His genius developed itself. He began to retouch and repair ancient armor, and then was tempted, seeing that these were things sought after (it appears with the most honest intention), to imitate them; and he found that they were bought and put in royal and imperial cabinets as real work of what is called cinquecento. And then he imitated the shields, working exactly upon Cellini's principle, that everything, however small, is worked out separately, and then fastened together; that nothing is cast, but that everything, to the smallest tip of the least finger, is hollow; and he worked on, and produced it by his artistic and careful manipulation. He began to work this way, and he found his silver work also became considered as ancient, and was adopted into collections of valuable antiquities. He then learned the power of his own genius, and he soon rose; and, when the late revolution in France took place, he had commissions for works to the amount of 60,000*l*. And this was all his own work, the production of his own hands. However, his losses were in common with many others who had engaged in higher branches of art, and he has been since in this country: but certainly those specimens of his work which we had in the exhibition were not only most beautiful, but most exquisite; and many persons who took the pains to examine in detail some of the works in silver, which were presented by one French house in particular,— the Frères Maurice,— must have been struck by the high artistic merit of them all. And they all are worked entirely bit by bit by the artist; and it was impossible they could be executed but by an artist who could model as well as draw, and who knew how to treat his metal perfectly, so as to give all the softness, beauty, and delicacy of the original model. [Cheers.]

THE SCULPTOR OF TO-DAY.

Now let us proceed to what may be considered a higher branch of Art, and that is Sculpture. We shall find exactly the same principle throughout: all the greatest artists of the most flourishing period were men who did their own work. You are probably aware — many, I have no doubt, are — at the present day, when a sculptor has to produce a statue, he first of all makes his model in clay: probably a drawing first, then a small model, then a model exactly as he intends the statue to be, full-sized and completely finished; from this the cast is taken in plaster; the block of marble of proper size is put beside it, and a frame over it from which there hang threads with weights: these form the points from which the workman measures, from corresponding lines, first to the models, and then from these which are over the cast to the cast itself; and by means of the merest mechanical process he gradually cuts away the marble to the shape of his cast, and often brings it so near to the finished work, that the artist himself barely spends a few weeks upon it. This was so much the case with a very eminent sculptor, that it is well known he hardly ever had occasion to touch it.

THE SCULPTOR OF THE MIDDLE AGES.

Now, that was not the way the ancients worked: they knew perfectly well that there was more feeling in the few touches which the master-hand gives, even from the very beginning of the work, than there can be in the low and plodding process of mechanical labor; and we find that those who were really exquisite sculptors in ancient times were also their own workmen. Vasari tells us of Orcagna, that he made at Florence seven figures, all with his own hand, in marble, which yet exist. Now, Orcagna was certainly a remarkable person. He was a sculptor, a painter, and an artist: and so justly vain, if one may so speak, of this varied character of his Art, that, upon his monuments or sculptures, he calls himself a painter; upon his paintings, he always calls himself a sculptor. His paintings are to be found in the cemetery at Pisa. The most beautiful and splendid of his works is the matchless altar in the church at San Michael, in Florence, of which, I am glad to say, there will be an exact copy in the future Crystal Palace. This artist, now, whose work is certainly most beautiful, most finished, as far as we can gather from his life, actually did the work with his own hands, and carved the whole of the marble himself.

BRUNELLESCHI AND DONATELLO.

I shall have occasion to speak of another celebrated artist under another head; and therefore I now will mention one who became very celebrated, and from whose life it is evident that he did the whole of the carving with his own hands,— and that is Brunelleschi. He lived at the period when Art was becoming truly most beautiful,— the period which just preceded the appearance, perhaps, of a still greater artist, but who, in some respects, departed from the purest principles of Art. He was the contemporary of Donatello, and they were both very great friends, and worked even in the same church. An anecdote related by Vasari, in the life of Donatello, will show us how truly Brunelleschi was not merely a sculptor, but a carver who performed the work with his own hand. He tells us that Donatello had received a commission to carve a crucifix (which yet exists in the Church of Santa Croce, under a beautiful painting by Taddeo Gaddi), and that he produced what was considered a very fine work: but he was anxious that his friend Brunelleschi should see and approve of it. He invited him therefore, one day, to inspect it; which shows that the work had been covered up and concealed during the execution. Brunelleschi looked at it, and said nothing. His friend Donatello felt hurt, and said, "I have brought you here to give me your opinion; tell me candidly what do you think of it?"—"Well, then," Brunelleschi said, "I will tell you, at once, that it is a figure, not of Christ, but of a peasant or a rustic." Donatello was indignant. It was perhaps the most beautiful specimen of the subject in carving that had been produced; and he used an expression which became a proverb; and I can not help remarking how many expressions of artists have turned into proverbs. The expression in Italian means this: "Take a piece of wood and make another." Brunelleschi did not reply. He went home. He did take a piece of wood. He said nothing to Donatello, and he carved his crucifix. When it was quite finished, he met Donatello, and said, "Will you come and sup with me this evening?" (Now I narrate this anecdote partly because it shows us what the great artists were,—that they were not great gentlemen living in any particular style.) [Applause.] "I will do so with pleasure," said Donatello. "Then come along;" and Brunelleschi, as they went on, stopped at the market, bought eggs and cheese for their supper, put them in an apron, and said to Donatello, "Now, you carry these to my house while I buy something else, and I'll follow you." Donatello entered the room, saw the crucifix, let fall his apron, and smashed the eggs. [Laughter and cheers.] Brunelleschi soon followed, and found Donatello with his hands stretched out, and his mouth open, looking at this wonderful work. "Come," said he to Donatello, "where's our supper?"—"I have had my supper," said he: "you get what you can out of what is left." And then, like a true, noble-hearted, generous artist, he took his friend by the hand, and said, "You are made to represent Christ; I, only to represent peasants." [Cheers.] Now, this shows, as I said before, that this poor artist carried on his own work with his own hands, shut up in his own house; in fact, that, as Vasari tells us, he never allowed any one to see it until it was quite completed.

MICHAEL ANGELO.

There can be no doubt, that, among all the names celebrated in Art, there is not one that can be put in comparison with that of Michael Angelo; a man, who, not merely from his follower, disciple, and intimate, Vasari, but even from jealous and envious and ill-tempered Benvenuto Cellini, receives constantly the epithet of "the divine." No man certainly ever had such a wonderful soul for Art, in every department: the cupola of St. Peter's, as an architect; his Moses and his Christ, as a sculptor; and his Last Judgment, on the ceiling of the Sistine Chapel, as a painter,—are three monuments which would have made the eternal fame, not of three, but of a hundred, artists in each department. [Applause.] Great, noble, generous, and though perhaps somewhat in his temper not amiable, yet sternly honest in all his dealings, he seems to have been the great center, around which the Art of his period revolved. There was no one so great, so sublime in any particular branch of it, that did not look up to Michael Angelo, and consider him his superior. It is acknowledged that Raffaelle went into the Sistine Chapel, and saw Angelo's wonderful works, and changed entirely his style upon beholding them; and it is particularly acknowledged by the writers of that time, that in every other department—civil engineering, etc.—he was considered equally supreme. Now, you would suppose that this man, upon whom commissions poured in every day for great works, would have employed a number of artisans to assist him; that he would have had carefully prepared models, which he would have intrusted to skillful artificers, so as to lighten his labor. But no such thing. There is every evidence we can desire, that, from the beginning to the end, Michael Angelo performed the whole of his own work; that he began with the piece of marble as it came from the quarry; that, if not always, pretty generally, he did not even condescend to make a design beyond a small wax model, but immediately set to work with chisel and mallet on the figure which he had in his imagination, and which he knew was as truly lurking in the inanimate block. Vasari shows us, in fact, from his unfinished pieces, in what way he must have mapped out the marble and done the work himself; and that is why we have so many vast pieces by him unfinished; either the stroke did not come out as he desired, or it went too far into the marble, and spoilt his labor. But so it is, that by far the greater part of those gigantic pieces which he finished, if not all, were the productions of his own hand, as well as of his intellect.

When about seventy-five years of age, Vasari tells us, he used to be just as indefatigable with his chisel and hammer as when he was a stout young man. He had near his bedroom, if not in it (for he lived in a most primitive and simple manner), an immense block of marble, and, when he had nothing else to do, he used to be hammering at that; and, when asked why he so continuously worked at this branch of his various arts, he used to reply that he did it for amusement, to pass his time, and that it was good for his health to take exercise with the mallet. He undertook at that age, out of an enormous block of marble, to bring out four figures, larger than life, representing the descent from the cross; and he had nearly worked out the figure of our Lord, when, happening to meet with a vein that was hard and troublesome, he one day broke it into half a dozen pieces. It was seen in this state by a friend, and his servant begged it for him. It was put together, and it is now to be seen at Florence. But Vasari says that it was necessary, in order to give him occupation, to get another large block of marble and put it near his bed, that so he might continue at his work; and he began another group of the same sort. This was at the age of seventy-five. And Vasari gives us an interesting account of how he worked: he says he was remarkably sober, and while performing his greatest works, such as the paintings, he rarely took more than a crust of bread and a glass of wine for his dinner. This sobriety, he says, made him very vigilant, and not require much sleep; and very often in the night he used to rise when he could not sleep, and work away with his chisel, having made for himself a sort of helmet, or cap, out of pasteboard, and upon the middle of this, in the top, he had his candle, so that the shadow of his body never could be thrown upon the work.

AN ANECDOTE TOLD BY VASARI.

Apropos of this, Vasari tells us an anecdote which is interesting as showing the character of Michael Angelo and of his time. Vasari observes that he never used wax candles for this purpose, but a particular sort of candles made of goat's tallow, which, he says, are particularly excellent. Wishing to make him a present, he (Vasari) sent to Michael Angelo his servant one day with four bags of these particular candles, containing forty pounds of them. The servant brought them; and Michael Angelo, who never accepted a present, told him to take them back again,— he would not receive them. The servant said, "They have nearly broken my arm in bringing them; and I shall not carry them back." "Then do what you like with them," said Michael Angelo. "Then," replied the servant, "I observed, as I came to your house, that just before your door there was a nice bed of just-hardened mud: I'll go and stick all the candles in this, and light them all, and leave them there." Michael Angelo said, "No, I can't allow you to make such a confusion as there would be about my door; so you may leave them." This shows the homely and friendly way in which the artists lived among themselves. [Cheers.]

We have a very interesting account of the manner in which he used to work at his marble, from a contemporary French writer, who says: "I can say that I have seen Michael Angelo, when he was about sixty years of age, and not then very robust, make the fragments of marble fly about at such a rate, that he cut off more in a quarter of an hour, than three strong young men could have done in an hour,— a thing almost incredible to any one who has not seen it; and he used to work with such fury, with such an impetus, that it was feared he would dash the "whole marble to pieces, making at each stroke chips, of three or four fingers' thick, fly off into the air;" and that with a material in which, if he had gone only a hair's breadth too far, he would totally have destroyed the work, which could not be restored like plaster or clay.

ADAM KRAFT, THE MASON OF NUREMBERG.

Going now to another part of the world for the same Art, we return to Nuremberg, and find a most magnificent piece of sculpture in stone, unrivaled in the delicacy and exquisite beauty of the work: that is the tabernacle in the Church of St. Lawrence. It rises from the ground, and goes up, not merely to the top of a very high church, running along like a plant, with one of the pillars against which it is built; but, as if the church was not high enough for it, creeping far beyond, and making the most graceful termination, which has nothing similar in works of this sort. So beautiful and delicate is the whole work, representing all the mysteries of our Lord's life and passion, that, for a long time, people used to assert that it was not stone, but modeled in some composition. But it has been proved beyond doubt that it is stone. Now, the man who made this was a mason,— a common working stone-mason,— Adam Kraft, who built part of the tower of the church, and whose name is upon it as the mason who built it; and he, until 1490, when he was fifty-three years of age, had never attempted to work as a sculptor; and yet, before he died, he had not only executed many beautiful works, and among them a carved staircase in the tower, but this exquisite work, which is without a parallel. He has represented the whole of it as supported by three kneeling figures, himself and his two apprentices, who executed alone the whole work.

We see, therefore, that wherever there has really been grand or noble work executed by sculptors, they have been artificers as well as designers; they have done the work with their own hands, as well as imagined it in their own fancies. [Cheers.]

THE ETRUSCAN POTTERS.

Let us go now to another department of Art. We have treated of metals and carved work in wood and stone. Let us now go to pottery. I have already observed that those beautiful vases, known by the name of Etruscan, were really made, originally, for domestic use; that, consequently, they were made by the potter, and not by a fine artist only. This has been fully proved. It used to be thought at one time that they were all funereal, or of symbolical use, being found almost entirely in tombs; but it has been proved that the greater part of them were for the common domestic purposes of the table and the household; that some, indeed, were given as prizes at the games, filled with oil; others were marriage presents, kept with more care in houses; but still they were the work of the potter, and must have been produced entirely by hand. Pottery was so much considered as a branch of Art, that in early Rome, in the time of Numa, there was a College of Potters: they were ennobled by being made a special guild. Any one who went through the exhibition must have been particularly struck with the elegance of forms which prevailed in all the Indian and also in the Turkish pottery; and the common vessels, used to carry water on the head by the peasantry of Italy and Spain, have the same elegance of form which very little of our china, or of our finest pottery, can exhibit: and the question naturally suggests itself, How is this, that in many countries there should be such beautiful productions, and at the same time that we should not be able to give the same beauty of form? The answer to this is given, I think, very correctly by Mr. Digby Wyatt, in his beautiful work on the late exhibition. He observes that "there can be no doubt that the reason of this beauty in the old pottery and in that of the East is, that it is made entirely by the workman himself." There can be little doubt that the most beautiful forms of Greek and Etruscan vases have been generated by a simple process of formation, and by the refined delicacy of touch acquired by the potter during years of practice. The perfect outline of some of the commonest objects of pottery from India, Tunis, Turkey, and the rest, demonstrate the methods by which contours equal in grace to the Etrurian and those of Magna Græcia have been produced. In the finer work of pottery among us, a distinct person is employed to design from him who makes the object; the one makes the pattern, and a mould is then made of the same figure as is given. But in the ancient and oriental objects, the beauty of form is attributed to the art being literally in the potter's fingers; and he acquires by the manipulation a fineness of touch, a delicacy of eye, which enables him to produce beautiful forms, which no one in the abstract could imagine." This is corroborated by the fact, that in the British Museum, in the great gallery where the Etruscan vases are kept, you will find two — and if you search the Vatican and Bourbon Museum, and all the collections in Europe, you will not find two — perfectly alike; there is a difference in them, which shows they were not produced by a model, but simply out of hand; and I have no doubt that the influence of this working in clay without a pattern is to be traced in all the works in metal and in glass of the ancients; because, no doubt, the eye of the man who worked in bronze had been formed by his familiarity with the beautiful patterns which came forth every day from the hands of the workmen in clay. I find, too, it is mentioned in Pliny, that when a knight named Octavius, in the time of Augustus, wished to have a vase made, it cost him a talent, or upwards of 50*l.*, to have the model made; which shows that the clay model was to be moulded before the marble vase was sculptured.

In this art, then, the producer is the designer, the artist is the artisan, and hence comes perfect beauty.

Next to this must be mentioned a very important branch of Productive Art, in which the Art of Design is always necessary to be in combination with the actual manufacture; and that is china, or painting on pottery. The Etruscan vases are often simple, sometimes of one color, sometimes they have nothing of ornament; at other times they have most beautifully executed, though sketchy, scenes of ancient mythology, or very frequently from the "Iliad." These are done in a way which shows that there must have been hundreds of artists who could do that work. Very frequently it was not a painter who did them, but the man who was at work on the pottery throughout; and, although mere sketches, they are considered as containing the elements of very beautiful drawing.

BERNARD PALISSY.

If we come to speak of the Art in modern times, a remarkable instance of genius persevering in its work may be taken from the history of Bernard Palissy. He was an artist, but as a painter of comparatively humble pretensions; for he tells us he used to paint figures, images, and so on: but in this he was an artist, to a certain extent. He tells us himself, in the biography he has written, that in 1544, when there seemed not to have been anything approaching to ornamental pottery in France, he happened to see an Italian cup, which struck him as being very beautiful; and he thought to himself, "Why could not this be produced in France?" He set to work. He was a poor man, hardly educated; but he had a great turn for chemistry, and was particularly desirous of finding out a manner of enameling pottery, and especially a white enamel, which he at length contrived to make. He took his work to be baked in glass-houses, and found it completely fail; then he set to work in his own house, and built a furnace for the purpose. He put his ingredients into the furnace: they would not set nor harden. He had spent all his money, and he gradually pawned all his clothes, and burnt every article of furniture, to keep up the furnace, and pulled up the fruit trees in his garden, and then the very floor of the house, to keep up the fire. Still the work was all spoiled. When he went out, the people charged him with being a coiner; he was ridiculed as mad; and every sort of annoyance came on him. He persevered yet; and, having found that his furnace would not act, he pulled it down, and with his own hands bringing the lime and bricks, he built another furnace, and then sat for six days and nights watching the fire. Then he got a little money by having a commission to make a survey, and came back to his work, and tried again. The mortar he used, however, happened to have some deficiency in it; and, just as the pottery was going to set, he heard a crack, and the pebbles in the mortar began to fly, and broke his enamel. He set to work again, and put his materials again in the fire; and this time there was a tremendous explosion: the ashes burst in, and the whole of his work was covered with black, so firmly set into the enamel that it all had to be thrown away except a few pieces, by which he made a trifle. For sixteen years he persevered in this way, and then was crowned with success, and produced the finest specimens of colored and beautiful pottery, such as are to this day sought by the curious; and he received a situation in the king's household, and ended his days in comfort and respectability. [Cheers.]

I could mention the beautiful earthenware of the sixteenth century, known by the name of "Raphael's ware," because it is supposed that Raphael himself did not disdain to make designs for common pottery,—pottery not to be used merely by the rich, but to be found in the common cottages, and houses of ordinary classes; the most beautiful specimens being in the apothecaries' shops of Padua and Verona. There we have the employment of high Art in the decoration of a common and ordinary object: for the pottery itself has no particular pretensions to elegance of make; but yet one of these plates, thick, heavy, clumsy, and coarse as they are, is worth a service of modern production as a work of Art.

Another department is statuary in pottery, which presents some very interesting features in the history of Art. Its very origin is exceedingly interesting. Pliny gives it to us as the invention of a certain potter, of very ancient date, whose daughter, when parting with a youth to whom she was engaged, did what I dare say some of you have done,—made him stand before the lamp, so as to throw his shadow on the wall, and so sketched his head and face; and the father, wishing to preserve this sketch, took some of his clay, and filled up the outline, and made a bass-relief of the countenance. That piece of pottery, at the time when the Romans first became acquainted with Art, and carried away the monuments of Greece, was preserved in the temple of the Nymphs, at Corinth, as a treasure of Art,—as the first germ from which had been developed some of the most beautiful productions of that kind. [Cheers.] At the time of the Roman kings of the race of Tarquin, the inhabitants of Italy had arrived at such perfection in this Art that they used to make chariots, horses, and other representations of clay, so well baked that they could be placed in the open air, and stood for many centuries without injury; and, in fact, we find them now among Etruscan monuments. The Romans must also have learned well how to paint them; because we find it stated that there was an artist, whom Varro particularly mentions, who imitated fruit in pottery so perfectly as to deceive any one, and make one think it was real.

LUCA DELLA ROBBIA.

But the most interesting example of this application of high Art to such products is what we find in the life of an eminent artist, and at the same time a potter, Luca della Robbia. He was put, when quite a boy, apprentice to a jeweler. He very soon began to make things in bronze: he gave up mere small modeling, and began upon marble, and succeeded very well. He worked the whole of the day at his chiseling, and sat up all the night drawing. He was poor; he was hungry and cold; and the only means he had of warming himself at night was to put his feet in a basket of shavings, while he sat there drawing, and would not be driven from it. Now, there was an education for him,—beginning first with small work, and exercising his patience and skill in that way. [Cheers.] Sigismund Malatesta, the great patron of Art at Rimini, was then building a splendid church, and he sent to Florence to find workmen to do the carving; and Luca della Robbia was engaged for this purpose. He had at that time been a silversmith's apprentice, had executed works in marble and bronze, and was set to undertake that noble work at Rimini; and how old was he when Sigismund engaged him? He was fifteen! And what pains and study must have been gone through in that time by the poor boy to make himself really an artist! He succeeded admirably at Rimini, and came back and received a commission to work with Donatello, to make a screen for an organ, and a bronze door. After all this, he suddenly discovered a totally new branch of Art,—modeling in pottery. He first contrived to manufacture his own clay; he then discovered a mode of glazing it to such a perfection that centuries of weather do not in the least affect it. He then contrived to color it in the most beautiful manner; and all Florence, and every part of Italy, may be said to be filled with works of Art equal to anything produced in marble, and valued as high. He went on improving his art; he began, then, tesselated pavements, and outsides of churches, which are most beautiful; and then, taking to himself, not a number of workmen to mould under him, but two near relatives of his, who were also artists and sculptors in marble, and who had left marble to come to work in clay, this family carried on the same work to the third generation, when the secret of the art expired with the family. But in those three generations, till Pope Leo gave the commission of making the pavement of the Loggie Raffaelle, this family made an infinite number of original works of Art, executed by hand, colored and baked by themselves. Now, there is a whole family of artists, in whom the productive and artistic skill were united. In our estimation we should say what a descent that was for a sculptor in bronze and marble to come to a mere potter! But I will read to you Vasari's sentiments on that subject, who, as the great biographer of artists, and who lived among artists, and was himself an artist, may be allowed to have a right sentiment upon it. He says, "Luke therefore, passing from one sort of work to another, from marble to bronze, and from bronze to clay, did so, not from any idleness, nor from being, like many others, capricious, unstable, and discontented with his Art, but because he felt himself drawn to new pursuits, and to an Art requiring less labor and time, and rendering him more gain: hence the world and the Arts of Design became enriched with an Art, new, useful, and most beautiful; and he, with glory and praise, immortal and unfailing."

We are told by Pliny that it was in the time of Augustus the practice was introduced of painting the walls of houses. Temples were undoubtedly painted before; because he tells us, that, when the temple of Ceres was falling into ruins, the paintings of Demophilus were cut away from the walls (as is sometimes now done with frescoes), and put into frames in order to preserve them. On one occasion, by the way, the city of Rhodes was saved, when Demetrius besieged it, because he feared a beautiful painting would be destroyed that was on the wall of one of the buildings. This painting of walls corresponded to our paper-hangings. What we do by putting on stained or colored paper, they did with the brush and the skill of the artist. The walls of Pompeii and Herculaneum are covered with most beautiful paintings, not merely ornamental patterns and arabesques; but there is such a mixture of the mere ornament, and of figures perfectly designed and colored, as to show that there was no distinction made then between the painter of a fresco and the house decorator: the artist was himself the performer of the work, and so beautiful is it, that we have hardly anything in modern times superior to what is commonly found on the walls of the private houses of cities, which were in a province remote from the capital, and which had no particular recommendation, that we know of, as seats of Art.

RAFFAELLE DECORATED WALLS AND MADE DESIGNS FOR THE LOOM.

We have an instance, also, in modern times. Perhaps one of the most beautiful productions of modern Art is the painting of that gallery to which I have alluded, where we see that Raffaelle undertakes to do what now one would never think of committing to the hands of any one higher than a common house-decorator. No nobleman, nor even a monarch, would think of asking the first artist of the kingdom to design the ornament of a gallery, scroll-work and grotesques, or mechanical ornament, which now would be done by a common process or a common hand. But in a former age there was no distinction made between what we now consider the higher and the lower sorts of Art; but the whole of Art was regarded as one thing: the greatest of artists considered it was his place to make even the smallest work — which might be insignificant in itself — great and noble, and to stamp the highest impress of Art on the commonest and most ordinary commissions that were given to him. [Cheers.]

I will now speak of a department of Art which will interest you, perhaps, more than others,— Art applied to textile fabrics. There is a great difference between what Art can do in this department, and what it can do for those through which I have passed; because the others are in their nature more lasting; they are to continue for a time; they are worth, therefore, the attention and care of artists of the very highest class. The fashions of textile fabrics are perishable and fragile,— they are capricious and changeable; therefore it is impossible to have the time, the leisure, and the same degree of labor, expended on them as is necessary to produce a great work of Art. I have read with considerable pleasure, and can bear testimony to the important suggestions in a pamphlet or lecture on this subject, delivered in this city by Mr. Potter. [Cheers.] He is quite correct in his estimate of the somewhat exaggerated ideas which may exist of the power of Art in connection with that which is not durable, and which in reality has its value, necessarily, for only a brief period. I agree, therefore, with him on that subject: but at the same time I accept as very important his concession, that, even with regard to that degree of Art which is compatible with the nature of the substance on which it is to be displayed, we do not do what we ought to do, and that we fall short of our neighbors, the French; or at least, that, while in that which is of secondary character we have put forth such perseverance and study as to have attained an equality with them, there is a point in that which is more delicate and perfect which we have not reached. [Cheers.] This is an important concession. It appears there is some reason why, in France, they can produce, even in printed fabrics, a superior and more delicate artistic effect than can as yet be given here: and I shall have to speak of the reason of this, which accords completely with what I have said, because in these works, which are not made absolutely by handicraft, but with the assistance of mechanical skill, there must be a distinction between the designer and the mere workman,— a man who keeps the machine in motion, and puts the work through it; although, no doubt, it is necessary for the designer also to have a considerable acquaintance with the process by which his design is to be brought out in actual manufacture. I only wish to observe how the principle comes down here.

THE RAFFAELLE CARTOONS.

You know the cartoons at Hampton Court, the most perfect and finished work of Art of Raffaelle. You would suppose these would be a labor of years: for they are all by his own hand, perhaps hardly aided by a disciple; and nothing can be more perfect than the outline and artistic distribution of the parts of the painting. What were these cartoons? Simply drawings for the loom. Raffaelle did not think it below him to draw patterns which were to be sent to Holland or Belgium, and there to be executed in the loom by weavers of a carpet. This shows how the very highest ideal Art may bend without degradation to assist practical Art with all its powers and resources; and where the union of the two in the same person can not be got, then we have to think of the means by which the harmonious combination of both may be brought to produce one effect. [Cheers.] While upon this subject, I am tempted to quote some beautiful lines upon the subject from one of our oldest but wisest poets; one who calls himself, upon his tomb, "the servant of Queen Elizabeth, the councilor of King James, and the friend of Sir Philip Sidney,"— Lord Brooke. Speaking as if it was considered in those days that the impulses of industry must be entirely regulated by the ruling power, he prescribes the duty of that in regard to the production of manufactures:—

> To which end, power must nurseries erect,
> And those trades cherish which use many hands;
> Yet such as more by pains than skill effect,
> And so by spirits more than vigor stand:
> Whereby each creature may itself sustain,
> And who excel, add honor to their gain.

Another remark I will read, which comes in the same passage, because it seems as, written in that age, prophetic of what may be considered the characteristic commercial policy of this day,— that policy which particularly owes, if not its origin, certainly its greatest impulse, to this city of Manchester. [Cheers.] He said:—

Now, though wise kings do by advantage play
With other states, by setting tax on toys,
Which, if needs do permit, they justly may,
As punishment for that vice which destroys,
To real things yet must they careful be,
Here and abroad, to keep them custom free;
Providing clothes and food no burden bear,
Then, equally distributing of trade,
So as no one rule what we eat or wear,
Or any town the gulf of all be made;
For, though from few wealth soon be had and known,
And still the rich kept servile by their own,
Yet no one city rich, or exchequer full,
Gives states such credit, strength or reputation,
As that far-seeing, long-breathed wisdom will,
Which, by the well disposing of creation,
Breathes universal wealth, gives all content,
Is both the mine and scale of government.

[This quotation was much applauded.]

HOW CAN EDUCATION REMEDY THE EVIDENT LACK OF ART IN THE ENGLAND OF TO-DAY?

Now, gentlemen (continued the Cardinal), I wish to come to some general results. We have seen, that so far, in every instance we have examined, wherever there has been real beauty and perfection of work, it has been in consequence of the practical Art, and of the fine Art, which ought to work together, being most closely combined, and, as nearly as it can be done, in the same individual, or else in the most perfectly harmonious co-operation. Now, we must watch very carefully whether the plans which are being proposed for artistic education — to be applied to production — will tend to combine these two characters better, or further to separate them. I come to the conclusion, that, if Art has always flourished in its perfection when the two have been combined; and if, on the other hand, it is acknowledged, that, at present, Art is not applied to manufactures as it might be, and if it is, at the same time, the clearly visible fact that our artisans and workmen are not artists, — I think I have a right to conclude that this separation of the two characters is the cause of our inferiority, and that, therefore, the education which we are to prepare for those who are to carry productive Art to its perfection must be one which will combine, closer than is now done, these two departments of what I consider one and the same thing. Now, is it or can it be so by the education we are now giving? I observed that what I have said till now has been acknowledged long before by one of the greatest authorities in matters of Art, — that is, Dr. Waagen, the director of the Royal Gallery of Berlin. He was examined, in 1835, before a committee of the House of Commons on the improvement of Arts and manufactures, and he said that "in former times artists were more workmen, and the workmen were more artists, as in the time of Raffaelle; and it is very desirable to restore this happy connection." I was glad to find this corroboration of what I intended to say. He says again, "We have, then, to endeavor a connection between these two, the productive and beautiful Art." Now, I ask what class of Art was it which was in combination with productive Art, to make it the parent of such a beautiful offspring in every department? It was not low Art; it was not the mere knowing how to sketch an object from nature; it was not merely linear drawing; it was not merely elementary Art; but it was high Art, and the highest Art. In every one of these cases the state of society was such — from what causes I do not undertake here to say — that it did permit the highest artists devoting themselves to what now they contemn and would despise; and, on the other hand, there was such honor given to the product of industry, that, when it really had the stamp of beauty upon it, it rose of itself to the department of high Art.

PORTRAITURE AS PRACTICED BY GREAT ARTISTS.

Let me illustrate what I consider the danger to be guarded against by another example. When you go into a picture gallery now, and you see the portrait of a man, why do you care the least who that man was? You see the splendid effect; the countenance, which perhaps has not a beautiful feature in it, but which, by the noble expression, by the beautiful tone of color, by the majestic character thrown around the head, by the harmony between the parts, even by the accessories, is made so glorious that you can gaze upon it for hours. It may be a Doge, it may be a merchant, a soldier, or a prince; you care not; you see there, not the portrait, but you see the painting by Titian, or by Rembrandt, or Vandyke; and the artistic merit so completely swallows up all the idea of personality of him who is represented, that, unless it happens to be some one particularly known, you never take the trouble of inquiring whom the painter represents. And why so? Because then portrait-painting had not become a distinct department of Art. There was no such thing then as a person who called himself a portrait-painter, who thought he could produce a noble likeness of a man by merely giving a facsimile of his features; but portraits were paintings by men who could have painted an historical painting of the highest character, and to whom it would have been thought not unbecoming to commit the greatest artistic works imaginable. But in modern times the portrait-painter is an entirely different person, and the pictures produced by that class of artists are unfortunately of but little value except to those who have a personal interest in the subject of the portrait. You know, too, that every one of those portraits, which cover such a vast extent of the wall of the Exhibition, will be transferred to the place of honor over the chimney-piece in the house of the owner; and, when his son grows up, it will be put on one side, that a portrait of the inheritor may take its place: and in the next generation it will be transferred to some other more out-of-the-way corner of the house, until at last it will find a more ignominious position than Cæsar's dust, stopping up a hole to keep out the inclemency of the weather. From what does this come? Simply from the attempt to divide Art into parts,— to say that there shall be a class of men who can do a portrait, but who can not do an historical or other great painting. And you find a difference when some of the great artists of the present day — for there are some truly great artists in England — do put their hands to what is considered another department of Art, and paint the portrait of a friend, or of any one else: it becomes in itself a fine creation of Art, and it will not perish when the person is forgotten; but it will be known by the name of the person who painted it, and not by the name of the person who sat for it. In this way, too, high Art, when applied to a lower branch, raises its character. This is what ought to be the fundamental basis of artistic education. If we really mean to make more than improved designers or draughtsmen for mechanical work, we must have great artists who are not afraid to work mechanically at the same time that they are great artists; we must have the feeling that Art commits no unworthy condescension in giving immediate assistance to the processes of production.

FORMERLY ART ENNOBLED THE ARTIST AND HIS WORKS.

The famous artists of whom I have been speaking were, as we have seen, men who worked at their business, and yet were not considered as working men; they were considered as artists, and treated as such. And it is that, I am afraid, which makes the great difference between our time and theirs. Art, unfortunately, is not now considered so noble as to give rank and station, as it did in those days. I do not mean that the great artists, those who devoted themselves to what are considered works of high Art, do not receive patronage and countenance, and even high honor; but we find that in those days such distinctions were bestowed on the artists themselves in productive toil.

HOW POPES AND KINGS ONCE WELCOMED ARTISTS.

There is not, perhaps, any part of the history of Art more interesting and beautifu than those portions of Cellini's memoirs which show us the manner in which he was treated: he used to go, when he pleased, to the Pope to take him drawings and models; he speaks of going in without even waiting to be announced,— going in the evening, after laboring all day in his work shop, as a matter of course. He was treated in the same manner by the Grand Duke of Tuscany, and by the King, Francis the First: when he was working for him, the king used to go at any hour and visit him; and Cellini gives rather a characteristic anecdote, proving how very familiar such visits were. One day, while at work, and, as usual, rather in ill temper, an apprentice or servant did something which displeased Cellini, and he roughly took the youth by the shoulders, and pushed him across the room, The apprentice fell against the door, which was just then opened by the king, and he fell fairly into the king's arms. Such was the familiar way in which kings and great personages used to visit Cellini, and find him in his apron among his workmen. [Cheers.] But I believe, myself, that it is not patronage which Art wants in modern times. Patronage it has; you, gentlemen, here, many of you, I know, would not scruple to go far beyond the mere calculation of interest, were it in your power to raise, by your patronage, any one who gave evidence of genius, and reward him as he deserved. It is not patronage, but honor, that Art wants. [Cheers.]

WHY FRENCH ART WORK SURPASSES THAT OF THE ENGLISH.

Now, speaking of the department to which I have just alluded, there is a passage worth quoting from Mr. Ward's book, "The World and its Workshop," on the difference between English and French designers in the textile fabrics. "France has studiously cultivated the Art of design, and advanced its professors to the rank of gentlemen; in England, on the contrary, with some exception, it has been degraded to a mechanical employment, and remunerated at weekly wages. France has, in consequence, a species of industry to which we have no claim,—the production of design for exportation." Now, having drawn these general conclusions, we must come to some practical applications. The first, that we must avoid making too great a separation between that character of Art which it is proposed, now, to impart to our products and the higher departments of Arts. I have observed that the separation of Art into two departments, high and low, seems to be dangerous, and it will, perhaps, prove fatal. You may educate a great number of good designers, persons who will make tolerable drawings, and with rapidity; but the influence upon these which are considered the lower stages of art must come, not from below, but from above; it is only Art in its highest department that gives the true feeling of proportion, the right sense of harmony, whether in color or in design, that gives also that sense and feeling of the adaptation and propriety of things to their purpose, which is indispensable. Any one must be surprised at seeing the extraordinary combination of the styles of different countries and times, in our works of Art, from the want of a regular artistic education. I therefore think that the first thing which must be done is to try an education which will not give merely a great degree of elementary artistic power, but that, while we give what may be called the rudiments of Art to every one, if possible, so as to give them all the opportunity of developing a higher taste and power, if they possess it, we must not, in looking beyond that, satisfy ourselves with the idea that we can educate a great number of artisans to a middling degree of artistic feeling, in the hope that thereby we may influence the character of our manufactures; but we must endeavor to combine the two, to bring down the high Art to mingle with the lower, in the feeling that it is the common interest and duty of artists to improve the productive arts, and to carry into actual work—not merely into design—the powers which they possess. [Cheers.]

IN FRANCE, ARTISTS DO NOT HESITATE TO DESIGN FOR MANUFACTURERS.

The evidence of Mr. Skene, before the committee of the House of Commons, is to the same effect. He and Mr. Potter, and every other writer I have seen, agree that we are not equal with the French in the more delicate operations of Art applied to manufactures, and especially in textile fabrics; and he gives this reason: "The system of France is very different from that of this country, because in France artists of the first eminence employ their time—and make it a most profitable part of their employment—in pattern drawing, and they are paid very high prices by the manufacturers." This, then, accounts for everything, because it is the union of high Art in design with manufacture that makes the French superior. The evidence of M. Coquerel, who is himself an eminent architect and designer, shows that a distinguished artist, who became president of the French Academy of Arts at Rome, and one of the first of his day, was employed at Sevres, in the china manufacture; and he states, also, that of fourteen or fifteen French artists of the first rank, educated at Rome, with whom he was acquainted, many were scattered through France assisting in the different manufactures,—finding the market for the highest class of artistic work so limited, and so full, these men, instead of sinking into despair, or committing suicide, as has been seen in similar cases, turned their high talent to the assistance and improvement of manufactures: and they are not thought to have dishonored themselves by doing this; or is it considered their superior education was thrown away upon them in qualifying them for the posts they now occupy. Why should it not be so here? Let any one go into the exhibition of paintings in London, and look around the walls; he will, perhaps, find only a small number of artists who can, with any hope of advancing themselves in the path to eminence, continue in what they may consider the highest department of Art; and I cannot but think there are many in distress, persons who might be making an honorable livelihood, if they would apply their talents to what they would wrongly consider, perhaps, a degrading employment, but which is most honorable,—the improvement of Art in its productive department. [Cheers.]

HOW TO FAMILIARIZE A PEOPLE WITH ART.

The second step, which seems to me of the greatest importance, is, to familiarize the people with Art. This I know is a very trite topic, and one which can hardly be considered to require from us much attention. I know it is proposed to make museums in every part, and I think that excellent. But we must observe how it is that that familiarity with Art has been obtained by other people; it has been, not so much by having places to which people were to go to see Art, but by rendering it familiar everywhere to their eyes. The ancient Greeks, proceeding from other considerations, which we, as Christians, could not for a moment wish to have considered, such as the public spectacles, and feasts, and ceremonies of Greece, filled their whole country with works of Art. Any one that will read the works of Pausanias, or the first book alone, will see how impossible it was for an Athenian to go ten yards in any direction in the city without seeing some beautiful work of Art. On every side there were monuments, and statues, and temples, of the most beautiful workmanship and design; and the people became impregnated with the sense of artistic beauty; and therefore whoever, even a mechanic, put his hand to any work, worked under the influence of that feeling. [Cheers.] In a later period, in Rome, there was the same plan of filling the public buildings, the streets, and squares of the city, with sculptured monuments, and with paintings, hung up so that the people could gaze on them; and Pliny gives us a long list of paintings put up by different emperors: and, by way of showing what was thought by the Romans of our northern ancestors, he says, that among those paintings on the walls of the Forum there was one of a shepherd; and when a German ambassador came to Rome, he was asked at what price would he value that picture?— which shows that it was considered by the Romans to be worth a high price, quite beyond a German's estimate: he, having so little idea of Art that he did not consider that question applicable to any possible artistic merit, said, "Why, I would not have the man, if he were alive and breathing, if you would give him to me,"— he considering it was the value of the man, as a servant, and not of the picture, that he was to regard. In a later age, at Florence, Vasari tells us how he and Michael Angelo, and other artists, used to meet together, and then go from church to church to see the beautiful works of Art in each, and then to discuss and criticise them. In the middle ages it was the Church, no doubt, which gave to public admiration the specimens of fine Art, and kept them before the minds of all, and, in fact, made the people be artists. The consequence of this was, that, as Cellini tells us, when his statue of Perseus, after having been finished, was put into a public place, and when he uncovered it for the first time, "It so pleased God, that, as soon as ever my work was beheld by the populace, they set up so loud a shout of applause, that I began to be comforted for the mortifications I had undergone; and there were sonnets in my praise every day fastened up on the gate, and the very day I finished my work twenty more sonnets were set up, with the greatest praises of the work, and Latin and Greek poems were published on the occasion." So well had the Italian public learned how to appreciate a noble work of Art!

Now, I look forward with no small expectation to what will be done by the new exhibition which is preparing (this refers to the Manchester exhibition), because I know that great pains have been taken to collect casts and copies of whatever is most beautiful in every department of Art, beginning with the most remote period, down to the present time; and if it be really open to the public, and if, especially, it be open for some portion, at least, of that day on which alone the artisan can enjoy it [great cheering], then I am sure it will do more towards raising the feeling of the people for Art, and consequently towards introducing an improved practice, than any set of lessons or any teaching could do. A very strong remark is made by Dr. Waagen, before that committee: when asked if they shut up the museum at Berlin as they do in England, at certain times, to enable artists to copy, he says, "By no means, because I believe Art is far more promoted by the people seeing it than it is by any number of artists making copies."

LACK OF ART CULTURE IN ENGLISH UNIVERSITIES AND SCHOOLS.

But it appears to me there has been a deficiency in the general education among us in the matter of artistic culture. I cannot but be struck with this when I see that among all the colleges and schools belonging to this country, so respectable and richly endowed, there is not one of them, so far as I know, which has made any collection or museum that might train the young men who are educated there in a familiarity with Art. I do not think any college in either of our Universities, Eton, or any of the schools, keeps before the eyes of its young men examples of painting, sculpture, and of other arts of design, which might accustom them during their early years to admire and appreciate Art, and thus to contribute afterwards their influence to elevate its character.

CATHOLIC COLLEGES GIVE ATTENTION TO ART CULTURE.

At the same time, I must observe with sincere pleasure that this is not the case with our Catholic colleges; that, poor and unendowed as they are, there is not one of them which has not striven, at the same time while it has provided itself with a library, far beyond the proportion of its means, if compared with what others have done, to provide also some works of Art, and keep them constantly before the students. [Cheers.] At Stonyhurst there are many beautiful things, carving, lapidary, silver work, and jewellery, especially for church purposes. Ushaw, or St. Cuthbert's College, near Durham, is another instance: the walls there are covered with paintings, many of excellent masters, and engravings of great beauty; there is a museum filled with specimens of Art; the sacristy of the chapel is growing with proofs of the encouragement given there to modern artists, as well as with carefully-collected specimens of ancient Art.

I may be allowed to revert also to the days which I spent in St. Mary's College, at Oscott. There, through the munificence of a departed nobleman, and under the guidance of the refined taste of the greatest artist of this day, because a practical disciple of all the arts,— Mr. Pugin [cheers],— there was collected a museum which would have been worthy of a larger establishment; beautiful specimens of carving, of enameling, and metal work of every sort, so valuable that persons were sent from the department of practical art on purpose to make moulds and copies of the specimens: and almost all the cloisters were covered with paintings, some by very respectable artists, and others good copies. The students were thus brought up in familiarity with choice objects of Art, which has had an influence upon their lives since, and induced them to patronize and encourage Art. That collection, moreover, was, in the most liberal way, thrown open to every one who chose to come and visit us; we never saw any feeling of narrow partisanship, or exclusiveness of religious distinction; the house used to be visited every day by parties of people from the neighborhood; and nothing gave me greater pleasure than to see the young men who used to come there, and who were permitted to walk freely through the house. There was, at no great distance, a very considerable establishment for education, richly endowed, and having everything that could encourage the study of literature; but it did not possess, as it appeared, a single object of artistic interest within its walls: and often did the students of that establishment come up to St. Mary's and roam freely through it, and receive every courtesy. And that was at a time when Oscott was considered almost the centre of a strong proselytizing tendency, and I know that personally I was much more engaged in controversy then than I am at the present moment; and it was pleasing, therefore, to see that there was no feeling on the subject which could make it be apprehended as unpleasant for those young men to come to us. Bodies of those young men used to come to St. Mary's, with letters from their principal, couched in the most courteous terms, asking, as a favor, that his students might be allowed to attend the establishment, which could have very little other merit to many than as it was filled with works of Art; and on one occasion he informed me that, when any of the students of his house were particularly well-conducted, and had especially distinguished themselves, the best reward he could give them was to send them with a letter to us, to come and see Oscott College. Now, it will give you all pleasure to know that this generous, liberal, and gentlemanly-minded individual, the head of that neighboring college, was — the Rev. Prince Lee. [Immense cheering and laughter.]

CONTRACTING THE SPHERE OF ART TO BE GUARDED AGAINST.

One thing more, I will observe, is important; and that,— that we must not narrow the sphere of Art. There is a tendency to do so in this practical scheme of education. I observed in the late report, which may be considered as a programme of the department of practical art, that there are prizes proposed for artistic designs in three different departments,— for printed garments, fabrics for carpets, and for paper-hangings. Now, one of the conditions of the four drawings to be sent in to compete for the prize in all three instances is this, "the designs to be flat, not imitative, but conventional, without relief, shadow, or perspective." Now, that is the mediæval principle, and cannot apply to other styles of Art; and you are narrowing the sphere of Art, if you dictate, as a necessary rule of all designs in those three departments of productive art, that there shall not be relief or perspective in the painting; that the flowers must all be of one color, and that there must be no shadow, and no attempt to copy nature, but that the forms must be all "conventional," that is, such as a rose spread out into four parts, with a point between them, and the lily changed into a fleur-de-lis, and no natural forms to be truly imitated. Now, it is folly to think of competing with French art if our artisans are to be educated on that principle, because the beauty of design, where nature is copied,— where the flower glows in its own colors,— will carry the taste of the public, and I think rightly, in preference to a series of flat and unshaped designs. I think it is a wrong principle; and why? Artists will tell you that the carpet is nothing more than a background for the furniture; that the hanging of a wall, paper or whatever it may be, is nothing but a background for the furniture: and therefore that these must be quiet and of a lower tint, with nothing brilliant, and no attempt at the representation of natural objects. Now, I deny this principle; they are not background. The papering of the wall is in the place of the ancient painting on the wall; and I do not see why, if you only avoid whatever may offend the eye,— such as false perspective,— there should not be all the beauty and glow of natural objects given to the pictured papering of the wall. If we are to collect museums, to put before our young artists specimens from the paintings of Pompeii, and then to tell them that these wall paintings are done on a false principle, because they are good representations of natural objects, and not merely conventional drawings, how are we consistent? And, if you tell a young man who designs patterns for carpets that there must be nothing there which would not be, naturally, in such a position,— that there must be no sky or flowers there,— then you go to make it a mere pavement and nothing better. I should say that the real carpet should take the place of the ancient mosaic.

DIFFERENCE BETWEEN MOSAIC FLOORS AND PLAIN PAVEMENTS.

The ancients thought it not amiss to represent whole scenes on their pavement, with sky and rivers, men and horses; and Pliny tells us there were many celebrated men for this sort of work in Greece: but the most celebrated of all was Sosias: and he says, among his other works at Pergamus there was a remarkable one which was called "The Unswept House." It was a representation which certainly does not give us a very good idea of cleanliness of domestic habits,— of a floor on which all sorts of refuse had been left to lie about, fragments of meat, and the shells of crawfish, and everything which untidy people might leave after their meals. Such were the notions the ancients had of designs. I should, therefore, be inclined to fear that if we began to deal with Art upon a too confined basis, and on principles which belong only to one period of the history of Art, and if we now insist on their being made the sole basis of artistic education, we shall produce cramped and narrow-minded artists, and never enable them to take advantage of the great classical patterns to improve their taste. [Cheers.]

THERE IS NO IRREPRESSIBLE CONFLICT BETWEEN NATURE AND ART.

In concluding, I think among the greatest errors that language has imposed upon us, there is none more remarkable than the sort of antagonism which is established in common language as between Nature and Art. We speak of Art as being, in a certain manner, the rival of nature, and opposed to it; we contrast them,—we speak of the superiority of nature, and depreciate Art as compared with it. On the other hand, what is Art but the effort that is made by human skill to seize upon the transitory features of nature, to give them the stamp of perpetuity? If we study nature, we see that in her general laws she is unchangeable; the year goes on in its course, and day after day pass magnificently through the same revolutions. But there is not one single moment in which either nature, or anything that belongs to her, is stationary. The earth, the planets, and the sun and moon, are not for any instant in exactly the same relation mutually as they were in another instant. The face of nature is constantly changing; and what is it that preserves that for us but Art, which is not the rival, but the child, as well as the handmaid of nature? You find, when you watch the setting sun, how beautiful and how bright for an instant! then how it fades away! the sky and sea are covered with darkness, and the departed light is reflected, as it had been just now upon the water, still upon your mind. In that one evanescent moment a Claude or a Stanfield dips his pencil in the glowing sky, and transfers its hue to his canvas; and ages after, by the lamp of night or in the brightness of the morning, we can contemplate that evening scene of nature, and again renew in ourselves all the emotions which the reality could impart. And so it is with every other object. Each of us is, but for the present moment, the same as he is in this instant of his personal existence through which he is now passing. He is the child, the boy, the man, the aged one bending feebly over the last few steps of his career. You wish to possess him as he is now, in his youthful vigor, or in the maturity of his wisdom, and a Rembrandt, or a Titian, or a Herbert seizes that moment of grace, or of beauty, or of sage experience; and he stamps indelibly that loved image on his canvas; and for generations it is gazed on with admiration and with love. We must not pretend a fight against nature, and say that we will make Art different from what she is. I will read you some beautiful lines, which show

how our Art must be derived from nature. I translate them from the excellent poem of Schiller, addressed to artists:—

> The choicest blossom which the parterre warms,
> In one rich posy skillfully combined,—
> Such, infant Art crept first from Nature's arms;
> Then are the posies in one wreath entwined.
> A second Art, in manlier bearing, stands,
> Fair work of man, created in his hands.

I believe the idea of these beautiful lines is taken from the anecdote which Pliny has preserved to us of the contest of Art between Pausias the painter and Glycera the flower girl; she used to combine her flowers with such exquisite beauty, that they excited the admiration of the chief of artists, and he did not think it beneath his art to copy on the canvas the operation of her naturally-instructed fingers; and then she, in her turn, again would rival the picture, and produce a more beautiful boquet still; and the painter, with his pencil, would again rival her, and produce by his art the same effect as she had done with the flowers of nature. Let us therefore look on Art but as the highest image that can be made of Nature. Consequently, while religion is the greatest and noblest mode in which we acknowledge the magnificent and all-wise majesty of God, and what he has done both for the spiritual and the physical existence of man, let us look upon Art as but the most graceful and natural tribute of homage we can pay to him for the beauties which he has so lavishly scattered over creation. Art, then, is to my mind, and I trust to you all, a sacred and a reverend thing, and one which must be treated with all nobleness of feeling and with all dignity of aim. We must not depress it; the education of our Art must always be tending higher and higher; we must fear the possibility of our creating a mere lower class of artists, which would degrade the higher departments, instead of endeavoring to blend and harmonize every department, so that there shall cease to exist in the minds of men the distinction between high and low art. I will conclude with another beautiful sentiment from the same poem:—

> The bee may teach thee an industrious care;
> The worm, in skill, thy master thou must own:
> With higher spirits, wisdom thou dost share
> But Art, O man, hast thou alone.

A PLEA FOR FRÖBEL'S KINDERGARTEN, AS THE FIRST GRADE OF PRIMARY EDUCATION.

By Elizabeth P. Peabody.

The identification of the artisan and the artist, which Cardinal Wiseman proves to have been the general fact in Greece from the sixth century, and in Rome from the second century, before Christ, was no accident; but the result of the education given to the initiated of certain temples, especially those of Apollo, Mercury, Minerva, and Vulcan.

In Greece and Rome, there was an aristocracy of races and families, each of which had its own traditions of wisdom and art, connected with the names of tutelary divinities, whose personality presumably inhered in leaders of the emigrations from Asia, who were doubtless men of great genius and power, and served with divine honors by their posterity, and the colonies which they led.

This service, in the instance of the gods above named, involved education in the Fine Arts, just as that of Ceres and Proserpine taught the initiated of one degree the science of Agriculture, and those of a higher degree the doctrine of Immortality,—which vegetation symbolizes in the persistence of its life-principle and deciduousness of its forms.

In the far East, the productive arts were early included under the word magic; whose secrets, as an ancient historian tells us, were reserved as the special privilege of royal families.

Under despotic governments, the inspirations of Science and Art invariably have died out into formulas to be worked out mechanically; as has happened in China. But, in Greece and Rome, freedom, though it only existed as a family privilege, fostered individual originality. The initiated, believing themselves subjects of inspiration, would have that confidence in inward impulse, which, when disciplined by observation of nature conceived as living expression of indwelling gods, could not but be beautiful and true,

THE SIMPLICITY OF TRUE ART.

High Art excludes the fantastic, and is always simple,—because it is useful, like nature. The identification of the artist with the artisan will restore it, because the necessities of execution control design when artist and artisan are one. The modern artist is apt to design with no regard to use or nature. He needs the check of the executing hand upon his impracticable conceptions; and will be no less a gainer therefore, than the artisan, by identification with him. Hay, in his several works, especially in the one on "Symmetrical Beauty," shows that the generation of the forms of the ancient vases rested on a strict mathematical basis; and there is abundant evidence that the study of mathematics was quite as profound in antiquity as it has been since; though then it was applied to art rather than, as now, to the measurement of nature. The wars and revolutions which convulsed the world in the declining days of the old Eastern Empires, and even of Greece and Rome, broke up the ancient schools of magic and art. They never, however, were quite lost in the darkest ages; but preserved a shy and secret existence, and, at the revival of letters in the twelfth and thirteenth centuries, were restored for a splendid season of about three centuries, by secret societies like the Freemasons; and in many of the ecclesiastical cloisters. Then building and other mechanical works again became high art.

THE PUBLIC SCHOOLS AFFORD THE ONLY OPPORTUNITY FOR THE ART TRAINING OF THE AMERICAN PEOPLE.

This adequate education, with its elevating effect on the laborer, both in respect to his inner life and outward relations, can be given now, and in America, only by making our Public Schools give the same profound and harmonious training to the whole nature of all the people that those ancient secret societies gave to the few,—a thing that is to be expected much more by reforming and perfecting the primary department than by endowing universities; though the latter are the cap-stone of the educational edifice. Even the late liberal act of the Massachusetts Legislature, requiring a free drawing-school in every town of five thousand inhabitants in the State, though it is a move in the right direction (and it is to be hoped that the workingmen will not let the law lapse by neglecting to call for its enforcement), will be of very little use unless the children shall be prepared for these art-schools in the primary department. It is the main purpose of the present publication to set forth that this can be done, and therefore ought to be done at once.

THE KINDERGARTEN A PRIMARY ART-SCHOOL.

Fröbel's Kindergarten is a primary art-school; for it employs the prodigious but orignally blind activity and easily trained hand of childhood, from the age of three years, in intelligent production of things within the childish sphere of affection and fancy; giving thereby a harmonious play of heart and mind in actively educating — without straining the brain — even to the point of developing invention, while it keeps the temper sweet and spirits joyous with the pleasure of success. Childish play (as we have said elsewhere) has all the main characteristics of art, inasmuch as it is the endeavor "to conform the outward shows of things to the desires of the mind." Every child at play is histrionic and plastic. He personates characters with mimic gesture and costume, and represents whatever fancy interests him by an embodiment of it,— perhaps in mud or sand or snow; or by the arrangement of the most ungainly materials, such as a row of footstools and chairs, which become a railroad train to him at his "own sweet will." Everybody conversant with children knows how easily they will "make believe," as they call it, out of any materials whatever; and are most amused when the materials to be transformed by their personifying and symbolizing thought are few. For so much do children enjoy the exercise of imagination, that they prefer simple primitive forms, which they can "make believe" to be first one thing and then another, to elaborately carved columns, and such like. There is nothing in life more charming to a spectator, than to observe this shaping fancy of children, scorning the bounds of possibility, as it were. But children themselves enjoy their imaginations still more, when they find it possible to satisfy their causative instinct by really making something useful or pretty.

THE WISDOM OF FRÖBEL.

It was Fröbel's wisdom, instead of repressing, to accept this natural activity of childhood, as a hint of Divine Providence, and to utilize its spontaneous play for education. And, in doing so, he takes out of school discipline that element of baneful antagonism which it is so apt to excite, and which it is such a misfortune should ever be excited in the young towards the old.

The divine impulse of activity is never directly opposed in the kindergarten, but accepted, and guided into beautiful production, according to the laws of creative order. These the educator must study out in nature, and genially present to the child, whom he will find docile to the guidance of his play to an issue more successful than it is possible for him to attain in his own ignorance.

GEOMETRY IN NATURE.

Intellect is developed by the appreciation of individual forms and those relations to each other which are agreeable to the eye. There are forms that never tire. In the work of Hay, to which allusion has been made, it is shown that every ancient vase is a complex of curves that belong to one form or to three forms or to five forms; but all vases whose curves belong to one form are the most beautiful. These ground forms are of petals of flowers; and the mathematical appreciation of them is very interesting, showing that the forces of nature act to produce a certain symmetry, as has been lately demonstrated in snowflakes and crystals, that have been respectively called "the lilies of the sky, and the lilies of the rocks,"— for the lily is the most symmetrical of flowers. Fröbel's exercises on blocks, sticks, curved wires, colors, weaving of patterns, pricking, sewing with colored threads, and drawing, lead little children of three years' old to create series of forms, by a simple placing of opposites, which involves the first principle of all design, polarity. By boxes of triangles, equilateral, isosceles, right-angled, or scalene, the foundations of mathematical thought may be laid to the senses. Before children are old enough for the abstract operations of simple arithmetic, they may know geometry in the concrete. And, in these various games of the generation of form, the greatest accuracy of eye, and delicacy and quickness of manipulation are insensibly acquired, precluding all clumsiness and awkwardness.

Fröbel's exercises with blocks, sticks, curved wires, triangles, which lead the children to make an ever-varying symmetry by simply placing opposites, are concrete mathematics, which becomes the very law of their thoughts. The mind is developed by appreciated forms and their combinations. The same law of polarity is followed in the weaving of colored papers, where harmony of colors is added to symmetrical beauty; and from the moment when a child can hold the pencil, and draw a line a quarter of an inch long, he can also make symmetrical forms upon a slate or paper squared in eighths of an inch.

TRAINED TEACHERS ESSENTIAL TO THE SUCCESSFUL ESTABISHMENT OF KINDERGARTENS.

But to conduct such education as this is a great art, founded on the deepest science, both within and without the human soul; and therefore, preliminary to its being undertaken, there must be a special training of the kindergarten teacher. Froebel never established a kindergarten anywhere that he did not also establish normal training for young women, who were to supervise the children at their play and work, so as to make these guided exercises of the limbs and hands a moral, artistic, and intellectual education, all in one.

For moral culture, it is necessary that the children produce things, and play with each other, from self-forgetful motives of gratitude to parents and affection for their companions, or a gentle sympathy for the unfortunate. Moral culture can not be given in a didactic manner. Sentiment becomes selfish weakness unless it is embodied in disinterested action. Even successful and happy play involves mutual consideration. It is necessary that children should act from a motive leading them from within out of themselves. There is no way to learn goodness but to be practically good. Fröbel would not have children make things to hoard, or merely to exhibit their power, and stimulate their vanity; but to give away to some object of their affection or respect or pity. Before anything is done, the question always arises, Who is to be made happier or better by it? They can be kept busy the whole year in providing gifts for all their friends' birthdays, new-year's-day, and the Christmas-tree; and, especially, the poor and sick are remembered. Thus their activity is disciplined by their hearts, which supply the motive, no less than by their intellect, which supplies — or at least accepts — the law according to which the thing is made. They become intellectual by learning that there is always a law as the innermost secret of every object of nature and art. The rule involving the law is suggested in words at each step of the procedure, and repeated until the idea of the law is caught. As crude material and simple ground-form is varied into varieties of beauty, they get a knowledge deeper than words can convey of the substantiality of law, seeing it to be no less a factor of the thing than the material out of which it is made. In its turn, the material itself becomes the subject of an object lesson, not only as to its structure, but its origin; and this, when considered in its use, or the delight it gives, leads the mind inevitably to the spiritual Fountain of all good things. The child's own active heart witnesses to a heavenly Father, and precludes any necessity for didactic teaching on that point. It is only necessary to refer to Him when the little heart is full of generous love, and the little mind is realizing that its own thought is an indispensable factor of the thing done.

HOW ART EDUCATION IS RELIGIOUS.

Thus art-education is religious; because art is the image in man of God's creativeness. It has been profoundly said, that, if science is irreligious in its effect, because it deals only in appearances and its method is analysis which murders, art is necessary to strike the balance in education, because it deals in substances, and not only produces, but makes alive by giving expression to matter. Since what makes the crude and unformed material, which the child uses a thing of beauty or use, is the immaterial æsthetic force within him, which applies the law (itself an immaterial entity), he necessarily infers and appreciates that the universe as a whole is the guarantee of an immaterial Creator who loves its intelligent denizens.

It is impossible for a kindergarten to be carried on by a teacher who does not understand this constitution of human nature on the one hand, and the laws of the universe, in some degree, upon the other. No mechanical imitation, and no patterns are permitted; but the children are led on to act from their own thoughts by first acting from the teacher's suggestion or direction of their thoughts. It is astonishing to most persons to see how, almost immediately, they begin to invent new applications of the laws given. Originality is fostered by questions leading them to give an account how they produce effects, which prevents destructive tendencies, and gives clearness of intellectual consciousness; and no strain is put upon the brain, because the child is always kept within the child's world and made of ability there. In the moral sphere, also, questioning is a better mode of suggestion than precept: unless there is a certain freedom of feeling, and virtue preserves a certain spontaneity, hypocrisy may be superinduced. Children love others as naturally and well as they love themselves, if not better; and love has its own various creative play and its own modesty, which should be sacredly respected. Wake up the heart and mind, and moral dictation will be as superfluous as it is pernicious: and, above all things, children should not be led into professions, or be praised for goodness; but goodness should be presumed as of course.

KINDERGARTEN METHODS CONTRASTED WITH THOSE OF ORDINARY SCHOOLS.

In short, kindergarten education is INTEGRAL, resulting in practical religion, because it gives intelligence and sentiment to the conception of God and his providence, and prevents that precocity which is always a one-sided, deforming, and, ultimately, a weakening development. It is greatly in contrast with the ordinary primary-school teaching, which generally begins by antagonizing all spontaneous life (keeping children still, as it is called), in order to make them passive recipients of knowledge having no present relation with the wants of their minds or hearts.

But if the training which fits for kindergarten teaching not only involves knowledge of the sciences of outward nature to a considerable extent, but a study of the philosophy of human nature also; yet it is such a philosophy as any fairly cultivated, genial-hearted young woman, of average intellect, is capable of receiving from one already an adept in it; for it is the universal motherly instinct, appreciated by the intellect, and followed out to its highest issues. Froebel's philosophy and art is just the highest finish to any woman's education, whether she is to keep a kindergarten or not. Fröbel considered women to be the divinely appointed educators of children for the first seven years of their lives at least, until they become fully conscious of their power of thought, and know how to apply thought for effect. For two or three years, their place is in the nursery, whose law is acknowledged to be amusement. The nursery method of sympathetic supervision of children's spontaneity (which never should be left to uninstructed nurses) is simply continued in the kindergarten, where symbolic plays, for general bodily exercise, and the "occupations," as the quieter games of production are called, suggest conversations which are the first object lessons. It is quite enough intellectual work for children under seven years of age, to learn to express their thoughts and impressions in appropriate words; to sing by rote the songs which describe their plays; to become skillful in the manipulations the occupations involve; with such objective knowledge as is directly connected with the materials used. They can then go, at seven years old, from the kindergarten to the common primary school, with habits of docility, industry and order already acquired; wide-awake senses and attention; tempers not irritated by stupid and unreasonable repressions of their nature, and wills unperverted, and reasonably obedient. Is it not plain that, thus educated, they will easily learn to read? and the knowledge acquired from books will stimulate production in large spheres of life, and the love of labor will not be in danger of dying out when the progressive rise into "the perfect, good, and fair" is guaranteed by productions that shall bring the life which is to come into that which now is.

TO MAKE LABOR ARTISTIC IS TO MAKE IT ATTRACTIVE.

The immoral — some go so far as to call it the demoralizing — influence of our public schools, which now at best sharpen the wits, and give means of power to do evil as well as good, has called attention of late to the character of state education, and the necessity of making it industrial, if only to save the masses of children from the temptations that now assail those who need to earn their living at once, but who leave school at fourteen or fifteen years of age unskilled in any species of labor. The only way to elevate the laborer to equal social position with the professional man, or even to self-respect, is to make labor spontaneous and attractive; but to make industry ARTISTIC is the only way to make it attractive, and supersede that spirit of gambling in business and politics which so fearfully weakens and corrupts our national character, and threatens the liberties which rest on truth and justice.

PSEUDO KINDERGARTEN TRAINING DANGEROUS.

Finally, unless the right thing is done at once, and this reform of the fundamental education is initiated by competent teachers, a very great evil will arise. Already children's schools, assuming the name of kindergarten,— sometimes innocently, because ignorantly,— are growing up at different points in this country, which necessarily disgrace the principle of Froebel, who worked out by a whole lifetime of experimenting, the true processes of the first stages of human education. These pseudo-kindergartens are a mere alternation of the old routine with plays and imitative working by patterns, making children frivolous, or little machines, or else disgusting them; for, in proportion to their natural abounding life, children tire of what is mechanical.

The first thing we have to do, then, is to train teachers in Fröbel's science and art. There is one training school now, at 127 Charles Street, Boston, kept by Mrs. and Miss Kriege, educated in the best training school in the world,— that of Baroness Marenholtz-Bulow of Berlin, who is one of Froebel's personal disciples and apostles. It is to be hoped that the city or State will make this a public institution. Another pupil of Fröbel himself, Prof. Weibe, from Altona, Schleswig Holstein, where he left a kindergarten that he founded many years since, in order to bring the system to America, projects founding a training school, with its model kindergarten, in Springfield, Mass. And a very superior expert and adept in the Fröbel philosophy, now engaged in Lubec, Germany, and perfectly skilled in the English language, might be induced, by adequate compensation, to come and found another in some more southerly or western state. If there could be raised by private donations, or public appropriation, a loan-fund to enable many young women who ardently desire this education to attend the private school of Madame Kriege, in a year we might have enough trained teachers to open schools all over the country; and effectually commence that radical reform of primary education which shall ultimate in the Identification of the Artist and Artisan. "What is well begun is half done."

IV.

KINDERGARTEN METHODS AND THEIR DEVELOPMENT IN RELATION TO INDUSTRIAL ART EDUCATION.

By Miss Emma Marwedel.

KINDERGARTEN DRAWING AFTER FRÖBEL'S METHOD AS A PREPARATION FOR THE "INDUSTRIAL DRAWING," ADVOCATED BY PROFESSOR WALTER SMITH.

Fröbel 's method of drawing unites all other Kindergarten occupatious in an organic succession; it develops them from three occupations — building with blocks, the use of tablets and the use of sticks — which are preparatory; the laying of sticks is really drawing in wooden lines. Fröbel, observing always with great love as well as acuteness, the nature of the child, saw in its scribbling on paper, wood, or sand, an instinct which deserved to be fully encouraged in order to prepare the child for drawing — which is introductory to writing and art. He also noticed that at the early age of two or three years, the child was not able to execute free-hand drawing, and therefore needed an intermediate step, which would serve to develop a correct eye-measure, supporting the technical observation necessary to the execution of forms and models. These intermediate steps Fröbel gives by the use of the net, in squares. We may then ask "what is the net?" A net consists of the squares between perpendicular and horizontal lines, on which the child is led to fix its observation, that it may comprehend all signs and forms in four directions, exercising especially the measurement of the eye; the net assisting to cultivate the measurement of different lengths and breadths by these squares, and thus forming the habit of measuring and dividing the figure into its different parts before commencing the drawing; and enabling the child of three or four years to produce forms which have already become familiar by building, tablets, sticks and perforation.

This method of Fröbel's leads the child very soon to the copying of nature; the hand having gained a guidance and direction by drawing in the net — making drawing a study by degrees, gradually training the eye to find measuring points for symmetrical arrangement of forms, and familiarizing the child with the scientific names of lines, angles, and geometrical figures, which form the preliminary lessons of the system of Industrial Drawing so ably and convincingly set forth by Prof. Walter Smith.

The Kindergarten drawing exercises are first upon slates, afterwards in books, both carefully ruled in squares or nets. The pupil must draw at first under the supervision of the teacher, and in strict obedience to the rules, which are to be constantly and systematically repeated till the child becomes perfectly familiar with them, and understands fully what it is to do and how to do it, before it is allowed to attempt the invention of designs.

> Man shall be educated to free himself,
> But true freedom roots in order and self-discipline.

Emma Marwedel.

LATE PUBLICATIONS BY MISS MARWEDEL.

It will be seen that in the statement just given, Miss Marwedel deals only with drawing. This brief paper was written just after Professor Walter Smith's first visit to Washington in 1875. In her books relating to Kindergarten methods, since published, Miss Marwedel treats at length of color as well as of form; this is interesting as showing the natural development of the art instinct in man. Indeed, in the infant, it may be questioned whether evidences of a sense of color do not precede the indications of a sense of form; certain it is that the child early begins to notice colors and to distinguish some difference between them.

A pamphlet hand-book,* with package of "outline cards," showing Kindergarten work in tracing forms, and the boxes containing the colored balls, rings, etc., which are to be used in the earliest lessons of the Kindergarten and intended for use in the home nursery as well, have been recently received from Miss Marwedel.

The parts for use of the older pupils have not as yet come to hand.

In the preface to Part I Miss Marwedel urges that the attention of the mother should be given to the earliest indications of the awakening intelligence of the child. In this connection she says:

> The ethical and aesthetical perception of life, in the connection with the earliest development of the senses, has still been too little considered. What may be attained with it is shown by the convincing, happy results on those of weak intellect and idiots, in whom ethical — aesthetical sense — influences have been crowned with unexpected results.† The culture and exercise of the senses. such as Froebel illustrates them, in this spirit, in his extremely valuable Mothers' Nursery and Cooing Songs, repeatedly referred to in educational works in America and England, seem apparently little attended to by mothers. The Kindergarten, like a gardener's nursery, not being connected with the school, there remains for the latter the responsibility which it believes to have solved by the so-called "object-lessons."
>
> But as the school chiefly wishes to "teach," that is, develop the intellect, it proves itself insufficient.
>
> Firstly, the senses as such are not being developed; secondly, as the sense-perceptions do not go hand in hand with the necessary development of the sympathies, we find as a cousequence the increasing sharpness and coldness of intellect.
>
> Over-education is often complained of as doing harm; but this fear is entirely to be restricted to the intellectual faculties. No one has yet feared to over-educate the heart, the true home of all the warmer and tender feelings, the source of sacrificing affection.

THE SCHOOL GARDENS FOUNDED BY DR. ERASMUS SCHWAB.

> There is an earnest striving to bring the child in connection with nature: school games, holiday colonies, plantings of trees and rambles, all the results of this such noble endeavour. The famous school gardens, under their enthusiastic originator, Dr. Erasmus Schwab, extend their ethical-aesthetical mission from year to year. They are destined to form a genuine temple for higher views of nature. In them the fertilization of the heart, mind, and character is accomplished without preaching. The poetry of plant life, its coming and going, its silent resignation, its completely merging itself in nature's great work; the sweet legends, the poetical change of action between the blossoms and their playmates, the beetles and butterflies, the charm of the colours, the forms and the pleasant odours — all these are stored up lovingly in the child's mind. Yet, in order to attain this, methodical preparatory instruction is required. The child must know the A, B, C, of the language of nature before it can read with intelligence in nature's open book; the right time for this is too often missed. When the child is most tender and susceptible is the time when ideas and words, when affection and beauty are united in one feeling, namely, in the intimate connection of all things; in their forming, all of them, one great family, of which all are members.

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* The pamphlet is entitled "Childhood's Poetry and Studies in the Life, Form and Colours of Nature, by Emma Marwedel." Part I. Kindergarten Games, and those directed by the Mother and Family, their Meaning and Use Practically Explained. Pp. 20. Part II. Guide to the use of Comparative Diagrams of Form and Colour, as Necessary Basis for Home and Elementary Teaching. Pp. 42.

These are issued by several publishers in Germany, England, and America. New York: E. Steiger, 1888.

† Dr. Ed. Séguin points out that science chiefly owes these results to the women officials in the Institutions for the benefit of such individuals.

It is at this time that inborn sympathies should receive their first fertilization, by means of the poetical beauty and the poetical legends in plant-life.

The authoress has followed this plan for years. Starting with the sphere as the point of commencement which finds playful application in the ball, and the shapes of rounded blocks and rings, bringing colour and form into view, certain diagrams, representing a number of forms of plant-life, induce imitation, which, fertilized by poetic childlike narrations and observations, lead to clear perception of botanical likenesses and dissimilarities. With this we connect the cultivation of plants, and the drawing and modelling of them which lead to a desire, full of intellect and poetry, for a scientific classification.

The possibility of such a methodical development has become a reality.

What is here given has been applied in life and proved successful.

The co-operation of school and home, of mother and teacher, is the one thing needful.

May this, with God's help, be effected!

As the preface to Part II gives a summary of Miss Marwedel's development and experience as an authoress, it is here given entire:

PREFACE.

In the year 1876, in sending my Kindergarten and normal class work from Washington, D. C., to the government exhibit at Philadelphia, I gave utterance to a long-cherished conviction of my own, that the ball, as representing the sphere, the type of all life, was not made sufficiently prominent in Fröbel's development of the child.

Ever since that time — now a decade — this conviction has been active within me, until I have at length wrought it out, with the full force of my reason and experience, to a practical result.

I do not wish, however, to create the impression that my theory is an entirely new one; the fact being rather that it extends and systematizes the idea of the curve contained in Fröbel's teachings, and which was so clearly suggested by W. Guillaume at the International Educational Congress at Brussels, 1880.*

By 1882, my thoughts were so far crystallized that they were ready to be presented in the tangible form of, "A Circular Drawing System, or Childhood's Poetry and Study in the Life and Forms of Nature." (Supplemented with a Botany and seventeen classification charts of four feet square, in relief.)

RESOLUTIONS COMMENDING MISS MARWEDEL'S "POETRY OF CHILDHOOD," ETC.

The North American Fröbel Institute, meeting in Detroit in 1882, to which able body I disclosed my plan, gave me its unqualified approval, and urged the speedy publication of my work in a series of resolutions, which had, however, been anticipated by the indorsement of such prominent educators as Professors Eugene W. Hilgard, G. Stanley Hall, and Joseph Le Conte, to whom, on account of their intelligent sympathy and their friendly and active co-operation in my plans, I can scarcely exaggerate the expression of my gratitude. And I cannot omit acknowledging the practical kindness of the Chicago Free Kindergarten Association and the Board of the Pioneer Kindergarten Association.

The resolutions referred to were as follows: —

Resolved, 1st. That while we, as professed disciples of Fröbel deprecate all departures from the great fundamental principles laid down by him for the culture and development of the child's nature, yet we hail with delight all discoveries of new applications of his philosophy, whereby we can better adjust its force to the educational wants of the age, believing that truth had all-sided growth, and an adaptation suited to the changed condition of its subjects; therefore we welcome with pleasure the application of the curved lines representing all forms, vegetable and animal, as embodied in the system just brought to our notice by Miss Marwedel, of San Francisco, thereby giving larger scope and greater pleasure to the chief thought while tracing the handiwork of the Master Builder of the Universe.

Resolved, 2nd. That the Committee, feeling that an extended knowledge of Miss Marwedel's application of Fröbel's method will be of great use to children in the school as well as in the Kindergarten, urge the publication of her book, which will also contain directions and suggestions to use these forms, and, if necessary, that the North American Fröbel Union be requested to assist Miss Marwedel in any way in its power.

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*See Henry Barnard's Child Culture.

Resolved, 3rd, That a committee be appointed to confer, if necessary, with publishers of Miss Marwedel's book.

In pursuance of the third resolution, a committee on publication was appointed as follows: Miss Elizabeth P. Peabody, Mrs. Horace Mann, J. W. Dickinson, J. M. Sill, and W. N. Hailman.

But with all this encouragement, supplemented as it was with the logic of my development of the curve, and by W. T. Harris's argument, I was still unsatisfied. I felt that I had not yet touched the right spot in human existence, whereon to base the fair structure of human education. Thought upon thought drove me back over the steps the human being traces in his ascent to manhood. I reached the home, the mother, the cradle. Here, at last, in the mother, to whom Fröbel dedicated the first use of the curve, I found the place where the corner-stone of any genuine education must be laid. But where to find that stone which should become "the head of the corner"?

Another Kindergarten Congress and Exhibit, at Madison, Wisconsin, in the summer of 1884, brought my Circular Drawing System again before the public, and showed such renewed interest as gave promise of general adoption. The Chicago Free Kindergarten Association and the Cook County Normal School (under the principalship of Col. Francis W. Parker) induced me to give explanatory lectures on my Circular System of Drawing, a task which I performed with delight, as I had become fully assured of the instructive pleasure and creative impetus imparted by this method to children, even from the age of four years.

But the task, as a whole, is one I should not have ventured to undertake, were not the book, after all, The Child's Book, and its creation due to my living with children.

It reflects the many sacred hours spent in watching and directing the unfolding of their budding souls, and in loving study of their educational needs. It reflects also a thousand divine sparks of childhood's purity, poetry, righteousness, and reason; its devotion to duty, and its hitherto so much unappreciated altruism. My inspiration in writing this book has been, *sympathy* with the mother in her immeasurable responsibility; the condition of *childhood's rights to justice and happiness;* and finally, an abiding faith in the mental and physical evolution of the race. So let me hope that it will lead the mother and the educator, as it did me, inward to the depths of the nature of the child, and onward *with* the child.

EMMA MARWEDEL.

P. S.—This seems to be the proper place to express my most deeply felt gratitude to those who crowned my work in its embryo with their sympathetic co-operation and faith, in the spirit of true sisterhood. They are my two most unselfish acting revisers, Mrs. M. G. Campbell and Mrs. A. I. Toomey. To the late Mrs. Horace Mann, Miss E. P. Peabody, Mrs. Robert Fowler, Mrs. A. T. Kelley, Mrs. E. G. Greene, Miss Kate Atkinson, and many others, I am likewise indebted for precious encouragment and sympathy; not to undervalue the document of the Women's Christian Temperance Union; promising to favour my aim of awakening, "Conscious Motherhood."

POSTSCRIPT.

A year has elapsed since the lines above gave utterance to my life aims. These words are written in Germany: I expressed last year in America my deeply-felt gratitude to those who crowned my work in its first part ("Conscious Motherhood") in the spirit of true sisterhood, and now I have to state that another noble generous sister of the same spirit enabled me to have a second publication brought before the public; without her substantial, noble assistance, nothing would practically have been done. It was, furthermore, through her assistance that I was allowed to compare English and German methods of teaching with those in America; especially those branches destined to combine according to Mrs. Endora Hailman's profound motto: "the head, hand, and heart education." I met everywhere with the utmost courtesy and assistance, accompanied with high esteem of American schools, and her unparalleled enthusiasm and generosity in deeds and practical work for the introduction of Fröbel's method for the early development of the child. Intercourse with the most distinguished European educators of both sexes has consolidated likewise a cherished plan of mine for an International Educational Union. A number of names has been given to carry out the idea of an exchange of educational aim and practical thought.

All this may be revised as fruits ripened under the warm sunshine of the friendship of the best I met in all countries.

BRAUNSCHWEIG (BRUNSWICK), GERMANY, *July*, 1888."

From the introduction the following words on "Form and Colour as a means of Education and Instruction" are taken:

> In spite of these hints of nature, of all means of education, nothing has been left more to chance than an early comparative understanding of form and colour; and with this an early feeling, seeing, and understanding of the beautiful and orderly in our surroundings and in Nature. Therefore few are capable of using form as an expression of ideas, a thing in which the ancients and primitive nations were and are so far in advance of us. Why should this be? Because there is a notion that an understanding of form is a special power — not a general one; but is to be regarded as an individual gift seldom found. Yet this view is decidedly contradicted by art industries of carving among the Swedes, the Swiss, the folk of the Tyrol, and of Thuringia, as well as in many primitive nations.
>
> Drawing, especially if early helped forward (Commenius already lays great stress on this), is not often treated as the development of a power inborn in the child, and is consequently not attributed to a normal power of grasping and shaping which only requires methodical training, but as if it were an activity acquired with difficulty, depending on comparative calculation.
>
> Form, the universal language of nature, falls into few elements. The difference of their combination only effects the multiplicity of their appearances — Fred. Fröbel illustrates this by the sphere as opposed to the cube and the cylinder, as medium, connecting both. By an early conception of unity and variety of these principal forms, he leads the child to deduce harmony and unity from opposed points and does this by means of personal experience with this plaything, and, by this means leads the natural sense of form unconsciously to studies of form, whose educational importance extend far beyond the goal of a practical power. Complaints are made of the dearth of individual creative power of the present day. This partially rests on the child's early estrangement from what is his very own. Neither home nor school call forth originality or individual desire for work. "That will come later on" it is said. Later?—When all originality has already been killed! Still more is the educational necessity of an early contemplative influence of nature on the child's soul undervalued, and thus people fall into the inconsiderate zeal of forming instead of developing. How much of individual working power hereby is lost is incalculable.
>
> On the other hand, it is not to be denied that modern education begins to recognize in the understanding of form and colour, one of the most effective means of raising and strengthening the senses and the feelings, namely:
>
> By practice in seeing, so that the capacity to distinguish by comparisons and form may be early developed.
>
> By practice in higher feelings, so that he early learns to understand beauty and harmony in Law, and permeated by this understanding, may become stimulated to individual compositions of form and colours.
>
> By practice, in thinking, so that he may early learn to compare a whole with its parts; and again, different parts conceived as a whole, making thereby clear to himself similarity and dissimilarity.
>
> By practice and experience for practical knowledge, the absence of which is laid great stress on by teachers and specialists.
>
> The teaching of form and colour must therefore be regarded as one of the most important means of education and occupation; a truth which is nowhere more clearly demonstrated than in the Kindergarten — not as a consequence of direct teaching, but following the analytical comparative sense of form and colour, which is developed before it has attained a practical use.
>
> The curve, so prominent in the child's ball, in its direct relation to the lines of beauty in nature, as well as the connection of the shape of the ball as original type of all that lives and moves, in its mathematical relations to the teaching of form, in consequence of general considerations which guided him, was placed by Fred. Fröbel, at the end of a series of forms. He limited the application of this form, and yet, in its symbolic value, and its unchangeable unity and simplicity it ought to be regarded as the point of commencement for the aims to be attained. This is the reason why the authoress begins with the circle in her teaching of form and colour.
>
> The simpler and more intense is an expression, and the more often its repetition takes place in animating change, the more permanent are the healthily educational effects on the child.
>
> The outlines of the simplest forms of nature which surround the child are therefore earliest comprehended by him, and first awake the wish of imitation. The child sees in the ball the round apple, and at the same time tries to recognize the difference between them both, because he is fond of them both. Educational guidance has to avail itself of this: appearances of colour, form, size, outer and

inner construction have to be connected with personal experiences, but not with the heaping together of externally given words — stifling all individual conception — but by activity, which leads to true knowledge.

NEED OF EDUCATING THE SENSE OF COLOR RECOGNIZED BY SCIENTISTS.

The recently instituted official examinations into colour-blindness and short-sightedness, have given rise to much thought and earnest effort to remedy the evil. In connection with this, Professor Virchow recently spoke out before the Anthropological Society in Berlin, that he was obliged to recommend his young students colour studies at the beginning of each fresh term, as he found them incapable of distinguishing red, blue, or brown, on black; or yellow, white, or green, on grey. So important did this shortcoming appear to him for the totality of human culture, that he made a petition to the Reichstag as to how this could be avoided. The state of affairs seems still more grave when celebrated oculists inform us that in schools, especially elementary ones, the perception, understanding of mixture, shades, and grades of colours, is paid no attention to; which is the more to be pitied as Tyndall, in a prophetic anticipation of the future of a higher developed sense of colour, points to the existence of a wealth of colours as yet undreamt of. Canon Farrar, of Westminster Abbey, says in a lecture before the London Society of Arts: "Each neglect of art as a means of education must carry with it great drawbacks. We give early instruction in reading, writing, and arithmetic, but the far more important development of feeling and understanding for all that is beautiful, is shown to be completely neglected. The same child, who can tell you how many pounds of meat he can get for a shilling, has probably never inhaled the odour of a rose with exalted feelings. Let us then before all begin with the culture of the senses in our homes and schools." At one of the meetings of the Teachers' Society in Leipzig, the painter and inspector of drawing, Fedor Flinzer, spoke on the growing necessity of modern education on a psychological basis, and of analytical comprehension of form and colour, which has to commence with external objective conception.

ACTIVITY OF SENSE PERCEPTION IN YOUNG CHILDREN.

And now as to the child himself? Observe his nature, his activity. Science maintains that the strength of sense of the child till his eighth year is greater than that of an adult, and later on diminishes. This becomes manifest when we consider what he acquires, without our teaching, by the activity of his senses within the first four years, two of which were passed without the means of speech. The child wants to know, wants to learn, but not by passively receiving.

He himself wishes to see, hear, taste, feel, and smell; he, so to speak, dictates the course of his own teaching. Free conclusions of reasons lead the child to free investigations about the what, how, why and when. The great principles of alternating influences, of continual permutation of matter, the incorporation of that which was, is, and will be, does not enter his young fresh child's soul as science, but as a perception of his senses. This is the time when the beauty, the harmony, and the laws of life must enter, like fertilizing sunbeams, in the emotional life of the child. The child knows it; he wishes to strive with his own powers for this self-education. He instinctively reaches for form and colour.

The remainder of the pamphlet is occupied with directions showing the methods of using the various objects and diagrams.

Miss Marwedel, after passing some months in Europe, both in England and Germany, in the study of different schools, and in arranging for the publication of the natural history series, for which the beautiful water color illustrations referred to in the introduction to this Appendix were prepared, returned to America.

Owing to unforeseen delays on the part of the publishers, due possibly to the great cost of the plates, these volumes of Natural History in the series prepared by Miss Marwedel have not yet been issued.

This devoted and enthusiastic disciple of Fröbel was not, however, while in Europe, wholly concerned with the production of her completed works; but, in common with all educators who have recognized a logical connection between the Kindergarten and the

Manual Training Schools, she was revolving the need that existed of finding some practical methods of continuing the training of the Kindergarten through properly graded occupations up to the age when the child is sufficiently grown to profitably enter upon the more advanced work of the Manual Training Schools proper, which demands a certain amount of physical development and muscular strength, as well as a certain maturity of mental development and of judgment.

As we have seen in the brief paper given, Miss Marwedel recognized at once, in the progressive system of Industrial Art Drawing advocated by Walter Smith, a logical development of the Kindergarten ideas and methods as applied to drawing, and to the development of the æsthetic nature of the child.

In the more recent movement for Industrial Training; which is, in part, an outcome of the introduction of Industrial Art Drawing in public schools, effected by Professor Smith and his coadjutors; and, in part, it is to be feared, a perversion of the idea which inspired the efforts of those enthusiastic educators—our authoress sees that, unless the Kindergarten can be linked to this new movement, there is danger that the methods of Fröbel will not secure that place in the scheme for elementary training in the Public Schools which, in her view, is eminently desirable. Her attention then, while in Europe, was especially directed to this purpose of ascertaining some practical method of securing the connection between the Kindergarten and the Public Schools, in accord with this popular innovation of "practical" Industrial Training. It will be seen, however, that Miss Marwedel is too earnest in her belief that the æsthetic nature should be developed to give any blind adhesion to a mere mechanical training which practically ignores the need for developing the child's perception and love of Beauty,—though it may be questioned whether the models of children's work in wood, which she has brought from Europe, do not appeal rather to the child's sense of humor, and to its interest in construction, than to any latent æstheticism of its nature; since it is not easy to see that these models possess intrinsically much more of grace or beauty than do the Slöjd patterns, which certainly make no claims to any such qualities.

As a result of Miss Marwedel's European investigations in the direction suggested, a pamphlet entitled "The Missing Link"* was issued by her early in July, 1889. This was printed in Washington, as Miss Marwedel was *en route* for the annual meeting of the National Educational Association in Nashville, Tennessee, where she proposed to show the material for use in her series of Kindergarten Games and Studies, and a set of the knife work in pasteboard and wood, which is proposed as the connecting link in the logical chain of methods continuing the Manual Training of the child from infancy to manhood.

In this pamphlet, which seems to be preliminary to a proposed more elaborate statement of the methods adopted by some European teachers, detailed descriptions are given of the methods of making the articles, diagrams of which are shown in the two charts of illustrations of the work in wood which accompany the text. So much of the text as may suffice to show the general character of the method follows.

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*The Missing Link: The continuation of the threefold Development of the Child from the Kindergarten to the Manual-Labor School, by Emma Marwedel. Ill. Pp. 40.

For the information of those who are unacquainted with Miss Marwedel's standing among Kindergarteners, and of her right to be heard on matters relating to this, and to cognate methods of education, the following extracts from a letter by the earliest American authority on Fröbel's system are given:

MISS PEABODY EXPRESSES HER OWN OBLIGATION TO MISS MARWEDEL AND CORDIALLY ENDORSES HER CLAIMS AS A PRACTICAL KINDERGARDTNER AND AUTHORESS.

I take this opportunity to say that I count it a special providence that at this moment Miss Marwedel's "Conscious Motherhood" is published, as it completely supplements my life-work, with an illustrated, practical application of Fröbel's true theory of the education of the child, establishing the fact that kindergarten development must begin in the home, and that the prime kindergartener is the mother, whose supreme happiness and perfection consists, in conjunction with her husband, in working intelligently for the education of the human race.

It was Miss Marwedel who, in 1867, first introduced me into Fröbel's genuine kindergarten, in the city of Hamburg, and inspired me with the courage to make it the main object of the remainder of my life to extend the kindergarten over my own country, where only, as Fröbel himself declared, it could have its full scope, as ours is the only nationality that has as yet recognized individual freedom to will as the characteristic first principle of humanity. It is only the self-knowing and self-governing that can create a government of the people, by the people, for the people; and the self-government of the child must flow from the mutual understanding of the child and its mother. To this end Miss Marwedel's book guides the mother and her assistants in the kindergarten and in the school.

I, therefore, make it my last word to refer my readers to Miss Marwedel's first book for mothers. It is in itself a key to the whole of Fröbel's philosophy, whose depths she seems to me to have sounded more thoroughly than any other of his disciples.

E. P. PEABODY.

BOSTON, *June* 22, 1887.

Many letters of similar purport from recognized educational authorities have been sent to Miss Marwedel with permission to publish them.

In the preface to a former work, quoted in the previous pages, Miss Marwedel gave grateful recognition to those friends who have aided her purpose. For the opportunity of studying these recent European experiments and for publishing the results of her observations, she expresses her great indebtedness to the timely aid and encouragement extended to her by Mrs. Hearst, wife of the United States Senator from California.

The thought that underlies all of Miss Marwedel's educational ideas is the value of joy in work — as applicable, in her judgment, to the older as to the infant pupil; and while to the old time pedagogue, with his birch, it must have seemed the most remote of incentives to scholarship, it may be well to remember that it is the recognized and sure characteristic of all good work in Art.

It will be noted that Miss Marwedel agrees with Dr. Harris, in doubting whether the Slöjd work is wholly satisfactory as the solution of the problem which has perplexed the believers in Industrial Education.

Miss Marwedel's pamphlet closes with a thoughtful article by Dr. Birch-Hirschfelder, a distinguished professor of medicine in the University of Leipsic.

This paper, which treats of the value of Industrial Training from a physiological standpoint, will be found among the papers which follow here in Appendix L, and in juxtaposition with the important paper by Dr. Harris, in which the same topic is treated from a psychological point of view.

From the introduction to the pamphlet are taken the following paragraphs:

THE MISSING LINK.

* * * We owe our children not simply a schooling, but a happy, rounded development of their best capacities.

Compulsory education will no longer be necessary when the school can be made a joy to the child. It is not the toilsome, overburdened, dissatisfied school-child that makes the best citizen. It is the light-hearted, creative boy or girl who has learned in childhood to love work for its own sake that becomes the best man or woman in after life.

It should be stated that the following paper is not offered as a completed theory, but as a mere collection of statements, in part theoretical and in part practical.

The practical part illustrates, descriptively and by drawings, what has already been proved successful in filling the gap between the Kindergarten and the Manual Labor School. This may be aptly termed the "Missing Link," and is meant to be applied as the stepping-stone to a systematized development, and is a logical sequence to the principles, method, and occupations prescribed by Fröbel in the kindergarten.

Personal investigation and study of the existing labor schools in Europe for young children, together with the inspiration gained from the reform through extension of playwork, have developed the plan of this work which presents a series of occupations suited to the growing capacities of the child. The extension of Fröbel's system into manual training is being ably promoted in America through Hailman's High School, Parker's Normal School, E. Marwedel's Circular Drawing System and Botany, and many other less-known methods. The works of Miss Eva Rodhe, of Gothenburg, Sweden, and Franz Hertel, of Zwickau, Saxony, present the first stages of the "Missing Link." They are descriptively illustrated. Both educators introduce the use of the knife as a tool, beginning with the cutting of stiff paper, bristol-board, and paste-board. The capacity of the child from five to eight years of age is gradually developed to work in hard wood, thus forming the introduction to the Manual Training School.

The merit of both these systems lies in their admirable adaptation to the needs of a school reform for children in the primary department. The vast variety of illustrations herewith given stimulates the creative powers of the child, and gives rise to endless delight in play-labor. The interesting article of Professor Hirschfelder, of Leipzig, given herein, will afford welcome suggestions to parents and teachers who feel the responsibility of seeking a scientific solution of the higher problems of education.

E. M.

San Francisco, Cal.,
June, 1889.

The pamphlet begins as follows:

THE MOTOR FORCES OF MANUAL TRAINING.

The noble structure of earnest devotion to the educational needs of humanity stands on its broad platform, unique in its reformatory power, under the simple name "Kindergarten."

Not as a remarkable outgrowth of the American soil; but in the extent and rapidity of its growth in America, in which it has no parallel. The independence, the generosity, the wealth, the republican spirit, and, above all, the clear recognition of cause and effect of the American woman, have promoted this process.

Hardly two-score years have passed since our venerable friend, Miss E. P. Peabody, sent the glad tidings from Europe to her sister, Mrs. Horace Mann, of the work of the great educational reformer, Friedrich Fröbel, urging the immediate introduction of his teachings into this country. This demand was met by a few German kindergarten trainers. But it was Susan Blow, of St. Louis, an American lady of wealth and high culture, who first connected Fröbel's educational system with our public schools. She was capable of personally conducting her free training schools, and, aided by the philosophic and practical insight of the city school superintendent, W. T. Harris, her work was crowned by the success of seeing sixty free kindergartens at once connected with the public schools of St. Louis. The exhibits of kindergarten work, and an actual kindergarten at Philadelphia in 1876, showed American readiness for the conception of a more rational development of the children of the Nation. Opposition and lethargy, criticism and indifference, against the highest inspiration and self-denial, battled bravely until public opinion was conquered by the unshaken mental and practical influence of the motherly power in the virgins of America. The loving charm of the virgin, her devotion and thoroughness, gave the method of Friedrich Fröbel its foothold, and, it is to be hoped, its indestructible power. Even the learned teachers in the National Teachers' Conventions consented to make room for the work of the five and six years' old school laborers. Notwithstanding these efforts, it needed ten years' hard labor and an outlay of almost a million dollars before Mrs. Quincy Agassiz Shaw and her associates succeeded in inducing the school board of Boston to adopt the kindergarten as a part of public instruction. It would be erroneous to accept the work thus far accomplished as work completed. The great truth of a natural human development does not end with the kindergarten, it rather begins with it.

PLAY IN WORK AND WORK IN PLAY.

No one denies that childish play is devoid of labor. On the other hand, it is generally admitted that play and labor are so closely united, in their two-fold nature, that it is difficult to separate them. Nay, more, we have learned to respect and promote their combined physical effect as a natural requirement of the child as it is of the man, proving that labor does not burden if a free and spontaneous activity is allowed. For instance, an artist does not feel his labor to be a burden, because his work comes freely and spontaneously to him. The truth of this fact is laid down most convincingly in the open letter by Dr. Oscar Browning, of Cambridge University, England, in favor of Fröbel's principles of education. He says he noticed the exactness with which a boy was able to give an account of the details of a cricket match, although it had lasted for hours, and had consisted of many complicated incidents, a proof that his power of memory had increased in the ratio of his joy, because delight and animation had been associated with free mental activity. Thus, illustrating a fundamental principle of Fröbel, Mr. Browning continues: "If we are obliged to acknowledge Friedrich Fröbel's method of education and teaching as appealing most to the universally ruling laws of nature, then the consideration of a difference in age is quite removed, and I see no reason why it should not possess equal vitality in our universities." Of all that man owes to Friedrich Fröbel, the educational application of this principle to early childhood is recognized as most fundamental to its development. It was this development in its natural needs which drove Fröbel into the humble hut of the peasant mother in Thuringia. Here he found, in the simple means of play-work, the childish sympathy of a mother's heart, yet untouched by artificial impressions, and these means, discovered through the impressions of nature, bear the character and manifest the fundamental truth.

Fröbel's first play-tools for the baby represent this fundamental truth in form, color, and motion. From this stepping-stone he gave a variety of experiences which, in sympathy with childish activity, furnish unconsciously a first and everlasting conception of truth. The reproduction of these impressions as free manifestations of the creative activity of the child turned into educational labor presents but the embodied logic of Fröbel's system, using the self-activity of the child which develops from within to without.

THE MANUAL LABOR REFORM IN GERMANY.

Psycho-physiological education brings Fröbel's method with renewed force to the front. No leader of a so-called "manual-labor school" in Germany (Directoren der Handfertigkeits-Schulen) fails to regard Fröbel's requirement for "knowing by doing" as fundamental to the universal requirement of a reform in all grades of instruction. The existing manual-training schools are the outgrowth of Fröbel's principles, ripened, after the experience of twenty years, into their present universal aim. The petition to this end presented to the Reichstag in Germany had the full sanction of Prince Bismarck, who granted 5,000 marks to the undertaking through the minister of public instruction. This petition was signed by more than seventeen thousand of the most distinguished men of all classes, and was supplemented by a special appeal from the commission on school matters of the academic association (Die Erweiterte Schule Commission der Deutschen academischen Vereinigung).

Lectures by men of all classes have been given. Exhibits of the teachers and pupils of the different manual-labor schools have promoted this cause.

These labor-training schools, as far as they have been introduced, are the work of an extensive association for mutual support, though the schools, individually, are independent of each other.

Their leaders recognize the necessity of providing early childhood with a well-arranged preparatory course of work, fundamental in principle and method to the higher grades, in manual dexterity.

THE NORMAL MANUAL TRAINING SCHOOLS FOR MEN AND WOMEN AT LEIPSIC AND DRESDEN.

They agree that this preparatory course must be undertaken by young, professionally-trained women, whose motherly power and cheerful influence will turn the happy school-work hours into a continued delight in home labor, thus uniting parent and child in work and happy satisfaction. To this end the seminary for the teaching of manual labor at Leipzig, under the directorship of Dr. W. Gœtze, has of late admitted ladies. The course is a short and inexpensive one, and occurs in the season of general vacation.

The course lasts from April 25 to August 21, and embraces: (*a*) Paste-board work; (*b*) carpentering; (*c*) wood-carving (Kerbschnitt); and (*d*) metal-work.

Four English ladies attended this course recently. (Twenty ladies went to Copenhagen for the same purpose.) Men students, of every nationality except American, entered the course.

The pioneer worker in manual dexterity, A von Clauson Kaas, has opened a similar institution for ladies at Dresden. His course gives instruction in wood-work (joinery, wood-carving), scroll-work, inlaid-work, and picture-burning on wood, in paper and paste-board work, paper-cutting and bristol-board work, pressed-leather work, cork-work, and modeling.

The extensive and valuable course of the manual-labor school connected with the Vienna public school (Buergerschule) under their enthusiastic director, Alois Bruhns, demands that the boy of nine or ten years old should possess a certain degree of manual skill in order to be able to fashion the material with which to experiment. Mr. Bruhns says:

"Normally endowed children try to busy themselves as much as possible, physically, to give reality to their thoughts."

What else is the play of children than the endeavor to give practical expression to their world of thought? When the child comes afterwards into the public school, and the instruction there progresses suitably and successfully, this endeavor continues, although usually in a more limited degree, according as the opportunities of instruction permit; the child tries to draw, calculates and measures all possible objects, and even tries to represent, with the help of its comrades, the stories which it has heard. How often one child asks another, for instance, to play Little Red Riding Hood, saying, "You be the wolf and I will be Little Red Riding Hood."

When the child gets into the higher classes, where he studies the exact sciences, he tries to reproduce at home what he has seen at school; he experiments.

If a child does not do this it is either because of a diseased development of the body, or because the instruction has given him no clear ideas, so that he becomes discouraged with his first attempts, and loses his desire of putting his thoughts into practice. It is only success and the attainment of results that give encouragement, which finally develops energy.

What has been said being admitted, we may assert that if instruction is to become more educational, and if it is to wake up and develop all the slumbering powers in the child, it must include physical work within its scope.

This course indicates the limits within which physical work should be pursued by whatever pedagogics has recognized as the essential and correct thing for the several stages of instruction and education. This forms the real and proper world in which the child lives, and gives practical shape to its thoughts. Instruction in manual dexterity should, therefore, as far as it falls within the time in which the child is undergoing school instruction, be strictly confined to these limits. Bringing in foreign objects, which are not connected with the work, tears the child out of its own world, withdraws it from its unitary development, and overburdens it with double mental work, if the instruction in manual dexterity does not become a mere mechanical drill.

The question might be asked here, whether our theoretical instruction has any need of being supplemented by physical work? It would carry us too far to answer this question for every stage, so we have given in the following only a rapid review of the requirements of instruction in the upper grades of a public school for industrial purposes, leaving out the subjects which contribute only to culture, such as writing, singing and athletics.

NATURAL SCIENCES.

Object: Knowledge of the most important physical and chemical phenomena, based principally upon experiment, with continual regard to the requirements of town life; knowledge of the fabrication of the most important products of industry, with especial regard to those which are of the most importance locally.

The lists of studies in Physics, Chemistry, Electricity, etc., which follow in the pamphlet, arranged for the three final years of Grammar Schools, are omitted.

SCHOOL REFORMS IN AMERICA.

The necessity for a similar reform is felt by the educators of America, and steps have been taken in Boston to form a National Association of those who believe that extensive modifications of the traditional curriculum in the direction of kindergarten, tools, modeling, drawing, form and color, cooking, sewing, and elementary science, in most or all these branches, are required for the good of both the scholars and the schools.

To this end the association proposes to unify the various departments of educational work from the kindergarten upward; to study the fundamental principles of education; to originate such a system as shall harmonize methods of instruction and training, and make them more effective in public and private schools.

The following-named gentlemen have been elected officers of this association: G. Stanley Hall, President; MacAlister, Melleney, Nicholas Murray Butler, School Superintendent Edwin Seaver, of Boston, and others."

Resolutions passed by the convention of German-American Teachers in Buffalo in 1885 are omitted. * * *

The problem of the continuity of human development in its philosophic conception, from the Kindergarten to the Manual Training School, is of recent date. Our teachers hardly realize the necessity for a professional training in order to teach the alternating culture of the head and the hand. This desideratum can no longer be deferred; for it constitutes not only the fundamental aim of the desired school reform, but is a problem of grave, social, and national economy. It presents the question:

Shall the child continue, without interruption, its three-fold development as begun in the kindergarten?

That is to say, by a self-activity encouraged gradually and systematically when the life's habits are being formed, by joyful creative occupations, which lead "through work to work" in its highest moral sense, and this at an age when the whole nature demands work; or,

Shall we systematically pervert and destroy all that has been accomplished by the kindergarten system by failing to form and control the child's life-habits through the continuation of Fröbel's developing principles till the child enters the projected Manual Training School?

Shall we not rather seek for a "Missing Link" to connect the kindergarten with the primary department, introducing educational labor methodically and gradually, thus becoming the leading nation in this rational reform?

The money furnished for industrial education by our wealthy philanthropists will not accomplish this work of reform unless Fröbel's kindergarten method is accepted. That means either by elevating labor to its ideal, or by merely facilitating and lessening the burden of labor to humanity.

The influence of Ruskin and Canon Farrar, in advocating the development of the ideal in education in England are referred to, and a passage from the latter, already given in these pages in the extracts from Miss Marwedel's previous work, is quoted; our author then says:

It is deeply to be regretted that these valuable opinions stand in direct opposition to the growing disposition in England to introduce labor in early childhood as a means of training toward mere utility. This might be permissible if it did not lead to the erroneous conclusion that the undeniable merits of utility suffice for the harmonious, three-fold, human development of the head, heart and hand for which we are seeking. This error has misled even prominent disciples of Fröbel to see manifested in the Slöjd system and its use, on the joiners' bench, the solution of the educational value of labor.

Similar danger lurks around our own doors. The revolutionizing principles of Fröbel's method have not sufficiently permeated our primary development, so as to demand and furnish a full course of kindergarten and manual drawing combined.

No doubt our normal schools will continue to respond to this need as rapidly as they have begun. Should this be accomplished the American nation can now hardly realize the advantages it will possess in this particular over all other nations.

America offers advantages in kindergarten training that are found nowhere else. The German kindergarten system admits the student at the immature age of fourteen, whereas the American normal-class pupil seldom enters under eighteen years of age. This maturity, together with the free training and its underlying culture (provided ample time and opportunity are afforded for thorough theoretical and practical training), afford the greatest inducements to the study of Fröbel's system.

The general efforts to furnish the primary school department with exercises in manual dexterity (which are but the extension of the kindergarten), as before stated, evince the recognition of their necessity.

A special teacher will be needed for the direction and supervision of the primary practice department of every normal school. This teacher may instruct the pupils of the normal schools as well as those who may be desirous of taking a special course. The encouragement of a continuance of salary during leave of absence would add to the teachers' zeal.

These general propositions are then followed by a description of the newly discovered methods, as follows:

THE "MISSING LINK" INTRODUCES THE KNIFE FOR CUTTING PAPER AND WOOD.

PLATE I.

The folding and cutting of paper with the scissors is a familiar exercise in the kindergarten, and develops, like other occupations of Fröbel, in three directions: in the understanding of forms of knowledge, of forms of beauty, and of forms of life.

Franz Hertel, director of the Manual-Labor Training School at Zwickau, combines this useful occupation with the drawing from objects instead of special patterns, recommending that the result of the child's efforts should be kept in drawing books, to serve as an exhibit of progress.

The new feature of Hertel's work lies in the systematized use of the knife instead of the scissors, as in the kindergarten, thus forming the intermediate step toward the cutting of wood and paste-board.

Both these occupations afford ample scope to the child in the full expression of form-language, in creativeness and designing. This should be the chief aim of all play-work in early childhood to afford the child that amount of glee and happiness which is its prime right toward a normal healthy condition. The attractiveness of the objects and their connection with the surrounding world in which the child lives, the cheapness of the material, and the simplicity of the tools give this whole method an inexpressible superiority of adaptation as the "Missing Link" between the kindergarten and the Manual Training School.

The beneficial effect of the deductive method on the young mind is a practical surprise to the thoughtful educator. In clear perception of the simple fundamental knowledge of things in a sympathetic playful direction of the older playmate (the teacher), the child will acquire a wonderful power of association of ideas and conclusions. The mental development in the kindergarten is mainly due to the deductive process, and will continue to be the source of spontaneous inspiration, if continued through the school grades.

Though Franz Hertel affords opportunity for an analytical comparison of the form he presents by dictation, yet the writer observed the process of deduction to be so delightful, even to her youngest pupils, that they frequently exclaimed, "Don't tell me!" when bent on solving some difficulty.

PRACTICAL HINTS.

Furnish the child with one sheet of white and two sheets of colored paper, each of four inches square, with which to illustrate similarity and dissimilarity in form and contents. The child uses the ruler and knife to separate the desired parts. This exercise teaches not only the discriminating of shapes and contents, but also of fractional parts.

While the knife gives easy exercise preparatory to the more difficult work of wood-cutting and paste-board work, the accompanying chart may suffice to make this system perfectly clear; but for the less experienced the following few words of direction may not be amiss, especially as it is intended to illustrate the deductive method by which self-help may be developed in the child. Experiments that have for years been made in the writer's own school, prove that this method is not only possible, but easy.

ANALYTICAL COMPARISON.

Having developed the understanding of a straight line which might logically be derived from the previous use of the curve (see Emma Marwedel's "Circular Drawing System"), the square, and the oblong, it will be easy to lead the child to a clear idea of the wholes, halves, and quarters and the multiplicity of corners and their inside points, called angles.

FUNDAMENTAL KNOWLEDGE OF THINGS.

Fundamental knowledge of position, direction, and dimension, by means of measurement and the accurate use of terms, have not been enough considered in their practical value in the kindergarten or in our public schools. Modern education begins to lay great stress upon the necessity of impressing the child with the full meaning of terms and their connection to its environment, requiring accurate description and comparison of objects in the child's own words; thus making him, so to say, self-training in thought and reason and preventing him from stringing words parrot fashion.

EXERCISES IN DRAWING LINES.

Lines may be drawn by the use of the ruler, by the aid of dots to be connected, and by using the eye-measure only.

EXERCISES IN CUTTING STRAIGHT LINES.

It is necessary to follow the lines of the ruled paper carefully with the knife, using the right and left hand alternately, to prevent one-handed development. This should be practised until a cut can be made which leaves the edges perfectly smooth and straight.

PAPER CUTTING AND ANALYTICAL COMPARISON OF CONTENTS.

The illustrations of paper folding as found on Plate I explain themselves. Accurateness, neatness, and a clear understanding of the meaning of the terms edge, corner, angle, whole, half, quarter, square, oblong, horizontal, vertical, and oblique must be insisted upon.

The descriptions of the illustrations must of course be omitted. That of the preliminary work in paper and paste-board, in which the knife instead of scissors is used, is followed by similar descriptions of the illustrations in the wood work; of which the introductory paragraphs follow:

WOOD-CUTTING IN A GRADED SERIES OF FORTY-TWO MODELS.

Of all teachers who should be visited," said Dr. W. Gœtze (Director of the "Handfertigkeits" Seminary at Leipzig), "Miss Eva Rodhe deserves the first place. She is a "true teacher, von Gottes Gnaden," as we Germans say. She preaches the gospel of a happy childhood, not merely by words but by language of the heart which creates life and joy where the every-day human being finds only insurmountable hardships and impossibilities. Miss Rodhe has proved her knowledge of child nature by introducing familiar forms in work, representing toys and the forms of life and of its environment, in exclusive preference to dead geometric combinations, thus establishing a link between the school and the home — between labor and enjoyment — whereby the combined interest of parent and child is greatly increased. Miss Rodhe is the very life-source of the "Missing Link." She kindly furnished the writer with the patterns for wood cutting on the accompanying plates, which will be furnished as a completed series in wood to schools ordering them.

To those who may doubt the possibility of such practical results being accomplished by young children, the writer may state that she has seen similar work, made from old cigar boxes, in Berlin, at the kindergarten of Frœbel's niece, Mrs. Henrietta Shraders, president of the Pestalozzi-Frœbel Association.

DESCRIPTION OF THE ACCOMPANYING DRAWINGS—GENERAL REMARKS.

The figures illustrated in the accompanying drawings are a few forms which may be used to illustrate this system, and the teacher may invent other forms, those shown serving as models. As it is the object of the system to teach children the use of their hands in manipulating wood, the figures to be made by them should commence with the elementary form of nature (a circle), and gradually work up to one more complicated and composed of several parts, which are loosely joined together, The figures as shown are two-thirds of the size they should be made.

MATERIAL.

The wood used should be one which is soft, not easily split, and cheap, such as white pine or cedar. The latter may be obtained from old cigar boxes, the nails of which are also admirably adapted for fastening several pieces of the wood together, when any such fastening is required, as they are generally round and of the same diameter from head to point, and will not, therefore, split the wood. If in any case it should be necessary to buy nails they may be obtained at hardware stores under the name of "wire" nails, No. 18, this size being about the proper length. The wood should be planed smooth on both sides, and should be about one-eighth of an inch in thickness.

TOOLS.

The most important of the tools is the knife, which should have a sharp edge, and, if the age of the child permits, a sharp point also, which may be used in making holes in the wood when the holes are required to be of a larger size than can be made with the awl. A brad-awl, which may be bought in any hardware store for a few cents, may be found useful in making holes for the insertion of the nails, especially when the latter are to be used as pivots upon which parts turn, as are the nails in figure 17. The diameter of the awl should be about equal to that of the nails, and the advantage of its use is that it will make a hole in the wood with less danger of splitting it than will the latter.

OPERATION.

The teacher should draw upon the wood the outlines of the figure to be made by the pupil, or if the figure consists of several parts, the outline of each part, taking care to have the greater length of the figure run in the same direction as the grain or fiber of the wood. If, in any case, a hole or recess is to be made in the wood, it should be made before the outline is cut out, as there is then less danger of splitting. If the hole is intended for the reception of a nail, and a brad-awl is not at hand, the nail may be driven in and then withdrawn, leaving a hole where it has been, and in which it may be afterwards placed. If a recess, such as the recess *a*, in figure 9, is to be made, a small hole should be first made with the point of the knife and enlarged with the edge. This having been done, the pupil should follow the outline drawn by the teacher, cutting off the superflous wood with the knife, after which the work may be finished smooth by rubbing with sand or emery paper of medium coarseness. If the figure consists of several parts, all the parts should be finished as above described; and if any are to be nailed together, the nails should be carefully driven in the holes previously made for their reception. If the nails project through the wood, their points should be bent over and rest against the side of the wood. When driving the nails the wood should rest upon a solid base.

V.

VIEWS OF SOME FOREIGN EDUCATORS IN REGARD TO KINDERGARTENS.

INTERNATIONAL CONFERENCE ON EDUCATION, LONDON, 1884.

In Part I of this Report was given the inaugural address of Lord Reay, delivered August 4, 1884, at the opening of the first great Educational Conference held in London during the "Health Exhibition."

The report there given was from the "Schoolmaster" of August 16, 1884. Many volumes of transactions have since been published in a series entitled, "Health Exhibition Literature." From volume XIII* of this series, which opens the reports of the Educational Conference (contained in four volumes), and is given to the meetings of "Section A," on "Elementary Education, etc.," the following extracts from the papers and discussions on the subjects of "Kindergarten" and "Infant Schools" are taken. Seventy-five pages of the volume are given to these topics. The discussions, participated in by German, French, and English educators, are full of interest. The following extracts from two of the papers are quoted as giving an exposition of the aims of the Kindergarten instruction, the philosophy underlying its methods, and the connection which this system has with all after education, and especially with its *relations* to the Arts and Industries. Want of space prevents fuller quotations from the very interesting discussions which followed the reading of the various papers.

The opening paper of the session, devoted to the consideration of kindergarten and infant schools, follows:

INFANT TRAINING AND TEACHING.

(Tuesday, August 5th, 10 a.m.)

Chairman: Mr. J. G. FITCH, H. M. Inspector of Schools.

(*a*) *WHAT FRÖBEL DID FOR YOUNG CHILDREN.*

By Miss MANNING.

It cannot be necessary in an assemblage like this to dwell on the facts of the life of Friedrich Fröbel; I will only remind you that this German thinker, writer and schoolmaster died in 1852, at the age of seventy. And, without regard to the young children under consideration, I shall at present simply state that the age referred to is from about three to six, and that children of that age in all classes of society are included. Before I try to show in what manner these little children, unconsciously indeed on their own part, are indebted to Fröbel, I am anxious to disclaim any intention of overestimating him at the expense of other writers on education — as Locke, Comenius, Jean Paul Richter, Pestalozzi. When we are seeking to urge the value of certain ideas rather than to elucidate the source and history of those ideas, we are, no doubt, apt to identify them too exclusively with a single individual. The same happens in all fields of human work. It is often by accident, or from mere convenience, that we mention one name instead of more, and perhaps, by degrees, the others do unduly fall out of view. But while it is true that Fröbel was only one in a line of philosophic thinkers — and no one could be more ready than he was to acknowledge what he derived from his educational ancestors and contemporaries — yet, I think it is quite just to give to him special prominence in regard to the training of children of three to six years old. And this partly because he did more keenly observe and more fully understand them than others have done, and partly because he invented certain practical methods which have rightly become associated with his name. Fröbel, therefore, naturally takes a distinct and a distinguished place among the benefactors of young children.

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* International Health Exhibition, London, 1884. The Health Exhibition Literature, Volume XIII. Conference on Education, opening meeting, and introductory address. Section A, organization of Elementary Education, etc. Printed and published for the Executive Council of the International Health Exhibition, and for the Council of the Society of Arts, by William Clowes & Sons, Limited, International Health Exhibition, and 13, Charing Cross, S. W., 1884. Pp. 512."

WHAT FRÖBEL DID FOR CHILDREN.

My subject is, what Fröbel did for these children. I wish to show very briefly: First, that he explained their characteristics. Secondly, that he indicated for them—(1) *an ideal;* (2) *a position;* and (3) *a training;* and I shall conclude with a few practical questions.

I. Fröbel explained their characteristics. He had much to say about the real infants — under three — as we find from his suggestive book "Mutter und Koselieder," and he had had wide experience with boys over the 3–6 age, but he also devoted earnest thought to the capacities and instincts and impulses of this intermediate time. He did what every one does who has to do with children, only his investigations seem to me to have been more thorough, more sympathetic, and more fruitful than those of most. In order to show later the bearing of his educational principles, I will refer to three points which especially struck Fröbel in the nature of young children. These are: 1, their activity; 2, their faculty of imitation; 3, their dependence.

THE ACTIVITY OF YOUNG CHILDREN.

(1) As to activity, we see that a child from three to six seldom rests but in sleep. Its delight is to be in continual movement, and to experiment with its limbs as with a new toy. Hands or feet, or both, must be always busy — climbing, running, pulling, cutting, jumping; and the voice is in constant merry use. At the same time the child's senses are most lively. The little eyes and ears take note of all that passes, and everything accessible is made a subject of touch. Thus knowledge is collected, and experience deepens, so that relatively, it has been well said, children learn more in their first five years than in any other period of life. Now the 3–6 children are often blamed for being restless and mischievous, but Froebel comes forward as their defender. He fully approved that they should learn the art of keeping themselves still, but he explained that their activity is a natural condition of rapid healthy growth — an innocent effort to make themselves strong and capable. If they are troublesome, something is wrong, but the fault does not lie with the activity.

THE IMITATIVE FACULTY OF THE CHILD.

(2) Then there is the faculty of imitation. We know what clever little mimics these children are. Whatever they see, whatever they hear, they try to reproduce. In the presence of anything that moves, their legs and arms can not be quiet. Not a sound strikes their keen ears, shrill or deep, beautiful or discordant, but they must become its echo. The whole day long they are ready, if they are town children, to turn themselves into sparrows, horses, or policemen; if country children, into cocks, gardeners, or wheelbarrows. Their voices instinctively repeat the dog's bark, the milkman's cry, or any other sound that comes within their ken. They are always "pretending," but very honestly pretending, to keep shop, to write letters, to drive coaches, and to engage in all occupations for which they are as yet unfitted. Most unintentionally, but accurately, they copy the tone, the expression, the manner of their parents and nurses, and especially of their brothers and sisters a few years before them. By means of this useful faculty we mould their early habits much more than through direct commands. It enables them, as it were, to slide

with the happiest ease into the social ways of those around them; and yet the imitation is no unimaginative copying. It results from children's strength of fancy. For the moment they throw themselves into another personality. Their muscles are flexible. their perceptions sharp; their whole existence is in the outward. It is thus pleasanter to them to be some one or something else than their insignificant selves. But in the exercise of imitation the 3–6 children are not unfrequently pronounced "silly" and trifling; and here, again, Fröbel comes to the rescue, pointing out that this faculty is an invaluable magnet, which draws the children joyously along the uphill path of learning and of doing.

THE DEPENDENCE OF THE YOUNG CHILD.

(3) The third characteristic I have called dependence. The child of 3–6 can not stand alone in life. Nor does it wish to do so. It has a sage consciousness that its own insufficiency must be supplemented by the experience, the skill, the wisdom of those who have lived longer, and it looks especially to its mother for this indispensable aid. By means of its clinging confidence in its mother, and its desire for her approving smile, the moral and religious sentiments awake, and it becomes obedient and gentle. I need not enlarge upon this point. No question belonging to human life is less disputed than the importance of the mother's early influence. Indeed, we might expect that here Fröbel could have to undertake no championship. But the relation, while recognized in theory, is not always carried out in practice, so Fröbel tried to recall neglectful mothers to their duties. He reminded them, too, that if they could not give all needful attention to these 3–6 children, they should call in only such helpers as could represent for the time the mother's judicious and tender care. He considered that the child is justified in demanding that during the 3–6 age motherly love should always shield and guide it.

Thus Fröbel explained, or, I might say, vindicated young children in respect to their characteristic impulses, urging that it is through activity in its various phases, through imitation, and through dependence on the mother's care, that the "baby" of two or three becomes changed into a capable, thoughtful little boy or girl of six. I will now try to show what he did for these children besides observing and comprehending them.

II. Fröbel indicated for children of 3–6 an Ideal, a Position and a Training.

FRÖBEL'S IDEAL CHILD LIFE.

(1) I will refer to his *ideal* for them. There is a poetic ideal for young children, very pleasing and to a certain extent true, which represents the age as one of simplicity, of joyousness, of grace and of indescribable charm. But poets treat everything with regard to emotional effects, and their picture has more to do with the outsider than with the children themselves. Besides, it is evidently sketched from a distance. In daily life we find that children, with all their charms, can be selfish and wilful, fretful and exacting. Thus the poetical view is partly contradicted by reality. Now Fröbel's ideal for children was imaginative and yet true. He saw them just as they are, but his standard for them was high and beautiful, because he always connected childhood with manhood, and viewed their young age in the light of the future. In fact his intense interest in education was founded upon his love of goodness. It arose from his desire to promote the development of noble characters — from his wish to make the world better — and seeing, as he did, that life is an indissoluble chain, the first few years of that life became invested in his eyes with an importance, a dignity, a value, which regarded in an isolated way they cannot possess. He traced back every faculty, every capacity, to its earliest sign of activity in the young child, and he realized that the first start determines the road — the foundation affects the whole building. At the same time Froebel perceived most clearly that every portion of existence has its own separate ideal. His favourite comparisons were drawn from the growth of plants. As there is in each stage of a plant's life a lovely completeness, so should it be with human beings. The infant must be an infant, the child a simple merry child, the boy a high-spirited boy, and so on. This conviction made Fröbel patient in his educational gardening. He could avoid forcing, because he dared to trust Nature, and thus was able to wait for the unfolding which would come in due course. His ideal for children rested, then, on the oneness of life, and on the typical distinctness of its steps and stages.

FRÖBEL'S INVENTION OF OCCUPATIONS FOR YOUNG CHILDREN.

(2) Further, Fröbel indicated for these children a *position*, by which I mean a sphere suited to their powers. Now the position of the 3–6 children is often anom-

alous and unsatisfactory. What do we find it to be? The nursery, in families where there is one, is their ordinary sphere, but how little scope it affords for their active imitative growing faculties! The cry "What shall I do?" is more often asked than answered in the nursery, and scantiness of occupation leads to ingenuity in mischief. The nurse is continually assailed by the What, How and Why of these eager children, to which, from want of knowledge and press of occupation, her replies are curt and disappointing. Their treasured odds and ends are despised as rubbish, and it is generally assumed that good behaviour is the exception rather than the rule. The discipline is one of alternate spoiling and scolding, while nursery storms are of frequent occurrence. No doubt there are numbers of excellent kind nurses, with plenty of common sense, under whose rule the children thrive, but there are many more who look on steps in growth as steps in naughtiness, and who wish that all under their charge would sleep and play in baby fashion. The worst risk, however, of nursery life lies in its moral influence. The nurse may be very capable as to her ordinary duties, but who can ensure that she has judgment, tact, and refinement of nature, or such habits of speech and action as these wide-awake little ones ought to imitate? As an alternative, the 3–6 children are perhaps introduced into the school room, but this also proves an uncongenial sphere. "Lessons" are not suited to their stage of growth, and by their brothers and sisters they are looked on as restless disturbers of the peace. Or, if they find a home in the drawing-room, it is to be treated as pretty play things, and to be petted by strangers, without compunction or sense of responsibility. These children are perhaps best off in families where there is no nursery, because they then have more of a mother's care. But even mothers and elder sisters seldom recognize enough of their claims to occupation, and their need of space and of out-door life. It is grievous to see the listlessness and the fretful ways which are the result of confined and restricting surroundings. Again, by mothers of the poorer classes this intermediate stage is ignored, and almost as soon as a child can speak or walk it is utilized as a nurse to an infant brother, and it has to take a share beyond its strength in household work. In the ordinary Infant School, too, notwithstanding improvements, the discipline is, on account of the numbers, very rigid for such young children. They can receive little of the motherly care that they so much need; vivacity is almost necessarily discouraged. They have small scope for observation except in set object lessons, and not sufficient employment for their active hands. Though they may be far better off than in an empty fireless room, or than playing in the streets, yet the Infant School seems to me by no means thoroughly adapted to secure the growth of infant faculties. Very many children, thus, of every rank and degree are without an appropriate position during these three or four years. Fröbel, however, by his remarkable invention of the Kindergarten, showed what the position of the 3–6 children may and ought to be, whether at home with their mothers, or temporarily elsewhere.

THE TRAINING OF THE CHILD.

(3) Thirdly, Fröbel indicated for these children a *training*—I might use the word education if that word had not become so limited in meaning. Now Fröbel's idea for little children's training was freedom in the exercise of faculty under kindly guidance. We have seen what their characteristics mainly are — bodily activity of every kind, manual power, fancy, imitative action, and loving dependence, leading to moral development. All these characteristics, all their opening capacities should have room to expand and improve. We must not try to do the education of these children for them. They are educating themselves every hour and every day. But, said Fröbel, we must give them opportunities for investigation and for action, and we should surround them with loving influences, which are as sunshine to these little human plants. In the Kindergarten such aims are carried out. The teaching is not direct instruction. It trains the senses and the observing powers through handling and doing; it exercises the muscles and limbs, it takes advantage of the imitative faculty, it appeals to the fancy by means of stories and talk, it works through the affections, it draws forth helpfulness and self-respect. In consequence the children advance imperceptibly but surely in health and strength, in knowledge, in skill and in conduct. Fröbel devoted much thought to the devising and organizing of suitable occupations and games for this early age, which are most successful in application. Still it is his *theory* of training which is the most important matter to bear in mind.

I have here to make two observations as to the Kindergarten. It is sometimes called a mere place of play. I think this accusation must come from those who have noticed it cursorily. The children are beginning to understand real work, and it is quite amusing to witness the earnestness with which the smallest in the class tries to induce its tiny unaccustomed fingers to weave a paper mat or to model a bird's nest. If the children are happy in their learning and their doing, should that be a cause of complaint? Work ought to be pleasant in every age, and especially should it be made so for the little ones, to whom merriment is as essential as fresh air.

Again, the Kindergarten ought to be looked on as a supplement to home-life, not as a substitute for it, except indeed in the case of those neglected children in whose homes bad influences prevail. For a part of the day it offers advantages which even the home does not. Owing to its gentle discipline, its large family, its practised staff, it can do in some ways more than the home alone can do, as a preparation for school and for life. But one of Fröbel's objects in founding the Kindergarten was that it might enable mothers and young girls to gain hints as to the training of children. And in any case, unless home influences are in harmony with the teacher's efforts, her work is disappointing and arduous, and in a measure thrown away. * * * .

Miss Manning here suggested as a topic for discussion the cause of the neglect of Fröbel's methods in England; and asked why English Infant Schools were not more successful in affording opportunities for the suitable development of their little pupils?

The question is a very simple one, and it ought to be brought to an issue. Are children's self-educating methods right or wrong? If right, let us follow their indications; if wrong, let us continue to neglect or to work contrary to them. One could almost wish that all nurseries and Infant Schools, and even all Kindergartens, were suddenly swept away and forgotten, in order that those who direct early education might place it upon a new basis. The educational views of the present day are theoretically in favour of natural rational training, and I fully believe that the reconstruction would be arranged in accordance with Fröbel's ideas. In that case, young children would have to acknowledge a debt of gratitude not only to their German benefactor, but to those who in their own country had enabled them to prepare during a happy childhood for a life of developed capacity, right conduct, and useful action.

After a spirited discussion participated in by eight speakers, the second paper was read, which is here quoted at length.

(b) *THE KINDERGARTEN IN RELATION TO THE VARIOUS INDUSTRIAL PRODUCTS OF A COUNTRY.*

By Fräulein ELEONORE HEERWART, M. F. D. H.

The Kindergarten system of education is generally understood to apply to children of four to six or three to seven years of age, but as these years form a portion only of the life — a link between early infancy and youth — the education of children during this time is only a part of the whole course. No one now denies that education begins with the cradle and continues after the child is seven years old; it is understood that the impressions of the first seven years are lasting, and that the formation of character begins early.

Comenius, Pestalozzi and Fröbel assigned to the mother the important office of commencing the education, and those who follow in her steps are agents, no less important, in moulding the child's disposition and turn of mind. All the child's powers come under the notice of the first educators, who, therefore, must study what the "gentle hints of children" mean. Sometimes these hints are signs of mental life, or indications of the will and affections, of physical strength or weakness. In any case they teach us what the child requires and we are the learners.

SOCIAL NEEDS OF CHILDREN MET BY THE KINDERGARTEN.

The mother cannot always be with the child; others help to influence it, and there is the Kindergarten either at home or near at hand where opportunity is given for the complete unfolding of the child's nature. The assembling of little children together, tends, 1st, to preserve their happiness, simplicity, and health; 2nd, to let them unfold their various powers without outward pressure; and 3rd, to prepare them for the next stage they have to enter upon. The means for this process of education must be suitable, and these we have received from Fröbel in his "Gifts and Occupations." They are simple and correct, and are thus calculated to be a basis for what the child has to learn afterwards. They contain not only the elements of future school studies, but also of all kinds of work, for they consist of the same materials as are used for works of art and industry. Even a superficial observer in a Kindergarten sees a variety of employments that are within the reach of children's capabilities; at any rate, he cannot help seeing that the children are happy over their work and play. But let a parent speak who has sent a child regularly to a good Kindergarten; his judgment will be a more accurate one — something of this kind: "My child is stronger in health since he began going every day, summer and winter, to the Kindergarten, since he learned to play gymnastic games that stimulate his physical powers; he now comes home full of information about the objects he has handled and the new hymns and stories he has learned; he finds plenty to do, he can turn a piece of paper into a windmill, a table or a pretty symmetrical figure, he can sing and play with his little sisters, his memory is improving, &c." And what says a teacher who receives a child from a Kindergarten? He finds that the new pupil's hands and eyes are to be depended on; that he is eager to learn and ready to work, that he can listen and attend, and understand the meaning of many words.

RELATION OF KINDERGARTEN WORK TO HANDICRAFT.

Artizans who have sent children to a Kindergarten look closely at the work that is brought home, for they recognize therein the elements of their own handicrafts. Many a workmen has reason to wish he had been in a Kindergarten when young, and many an artist has had to overcome by years of practice those obstacles that a flexible hand and a trained eye would have easily mastered.

The historian will see in the child's first efforts a resemblance to the crude attempts of nations; he will watch the stages of development as history has witnessed those of barbarous tribes, who have afterwards excelled in arts and industries.

The philosopher will trace his own lines of thought to the early impressions of his childhood; he will recognize in the child the working of the expansive mind; and if he attaches importance to the healthy growth of the body, he will not expect that the child's intellect should be out of proportion to his physical powers. Those persons who know not the manifold nature of the child, unduly develop one faculty to the detriment of another.

The pedagogue, who is parent and philosopher at the same time, sees the importance of harmonious development, and he pleads for sufficient time for the unfolding of all the faculties.

Thus the visitor to a Kindergarten will each find points to interest them; they will see that, while the child plays, it learns; it makes acquaintance with tools and materials; it sees the result of its own efforts, and feels happy, because it is conscious of progress; it sees the fitness of certain shapes, and is delighted with symmetry, order, and neatness. Success in small efforts produces joy and the wish to improve; idleness, with its evils, is no longer heard of.

"WORK" AND "PLAY" DEFINED.

Work is an outlet for ideas, and it establishes harmony between knowing and doing. Play, too, is a means of expression for what is in the child's mind. If you want to know children, watch them at their play; their dispositions and their notions are portrayed therein.

True the process of education is slower if you let the children act out what they know, instead of letting them learn from books and from people, thus accumulating knowledge by being simply the recipients of it. In this way they may learn much; but they will not become practical men and women in these days when doing is required of the learned and the unlearned.

If the child has received talents and powers, it also needs opportunities to make use of them; if it has learned to *know*, it must also learn to *do*. Knowing and doing ought not to be separated; the one would be isolated knowledge, the other mere machine work; but, if combined, they help to make a complete man.

Activity is natural and necessary to mankind; it means progress, life, and it shows itself early in the child, who, by grasping and seizing hold of an object, by stretching the limbs, develops physical power and places itself in contact with the outer world. This is *one* point on which Fröbel dwells, namely, that their movements should be encouraged, regulated, and made useful. But how seldom are parents and nurses conscious that these movements are hints indicating that the child needs some one to support its moving limbs, some one to talk and sing while it moves. Few remember that the child needs an object for its empty hands, in order to exercise and strengthen it; empty space is not sufficient.

THE BEGINNINGS OF EDUCATION.

Fröbel saw that something educational must be done for the smallest child; and when parents and nurses understand that whatever they do should designedly further the child's development, they will find it easy to direct their attention to it from the beginning; great will be the difficulty if they wait till the precious powers have run wild, and must either be checked or roused by strong means in later life.

Fröbel teaches us in his book for mothers how to commence the early education, and he provides us with the means. The first of these is a ball, in which form, colour, and movement are combined — the very characteristics of the objects that surround the child. Later on he provides materials out of which something can be made, for he believes in the creative power of the human being, a gift inherited from the great Creator. Why should other people — strangers — make the toys for children? If they were made in the presence of the child there would be the advantage that the child sees *how* they are made — then its powers of imitation would come into play.

Who does not know that the child will say, "Let me do it," when it sees the father water the garden, or the mother make a pie. Imitativeness is given to the child — it is a Divine gift, a great power that helps to move the current of life. Why do some people kill it by preventing the child from imitating in play, as it will some day have to do in actual work?

The child is a link in the human chain, which chain it will have to strengthen by its own efforts when it takes its place among grown-up people. It is provided with organs of sense, and with that wonderful instrument, *The Hand*, to enable it to connect itself with the outer world. It takes in impressions in order to reproduce them in some form or other. Every work of art, every day's humble task is a proof of the productiveness of the mind.

Work is our privilege. The child must be prepared for work, that it may not appear to him a trouble, as is the case with those who have no mastery over the material, and no control over their hands. There is beauty in the smallest work well executed, and children can do small things well, if taught.

Fröbel says: "There are three reasons why we should work; first, God works, and His works are perfect, the great as well as the small; secondly, Christ worked, every day He did some good, and those who bear His name should follow His example; thirdly, God has endowed us with talents, has given us opportunities, has granted us time. It would indeed be a sin if we did not work. The child too has all these gifts, only in a smaller degree; its work is called play, which, nevertheless, is important; it feels it has a share in the busy world, but uses its opportunities for activity unconsciously; it plays at the sea-side, in the garden, in the street, in the house, and everywhere the little hand is easily filled. With guidance it learns to do better, and with every improvement its powers grow. Let no one despise first attempts, they are the starting-points of those wonderful structures that we admire in every country.

SIGNIFICANCE OF THE SHOWING OF CHILDREN'S WORK IN THE EXHIBITION.

It is therefore a great step, which Fröbel's followers will greet with joy, that at this International Health and Educational Exhibition, the child's work has found a place amidst the nation's work. The future artizan and artist is represented. The "child is father of the man."

In various departments, foreign as well as English, the small attempts of children are recognized as forming a link in the chain of human efforts, artistic, practical, and useful. The little fingers have done what they could. The industry and patience of the child are exhibited side by side with the perseverance and progress of the nations. It is not meant that the child should be early employed in factories, by turning machines for the sake of cheap labour, but that it should have opportunities of unfolding its powers and of being happy over productive play.

Neither luxury nor comfort is the aim of this Exhibition, but beauty, usefulness, and the promotion of health; in all these the child is included. If exhibitors and visitors are pleased with the result, no less pleased are the children who contributed their mite to this International Exhibition.

Fröbel's words have come true. The child's play is no foolish trifling; it has a deep meaning.

THEIR RELATIONS TO ARTS AND INDUSTRIES.

The promoters of this Exhibition have done right in admitting children's work, they have given public recognition to the value of small beginnings, as illustrated by the Kindergarten system. In it they see the foundation of the nation's industries, It is easy to trace the elements of school lessons in the various Kindergarten occupations, for we see that by means of number, form, and colour, the way is paved to reading, writing, arithmetic, needlework, geography, geometry, history, natural history, freehand drawing; but it is also evident that every profession and art is represented in Kindergarten work, for they too are based on these simple elements.

Place what the child has formed in clay side by side with the potter's vase and the sculptor's work, and the connection is at once established. Form is the chief element in these gradations. The plastic material may be of various kinds — butter in the dairy — dough at the baker's. The child imitates them with sand or clay. The practised hand can give form to any shapeless mass; from soap, wax, sugar, dough, chocolate, upwards to metal and Carrara marble, we see the progress of mind over matter. The child soon imitates this kind of work if you give him soft material to suit the soft, weak fingers. Give him the raw material, as Nature does, and something will soon be produced. Many hands remain awkward and stiff from want of early practice, which would have given mastery over the material. How many persons are discouraged and disheartened over their work, because they have no power or facility; how much clumsy work is done, how much time lost, when stiff fingers attempt work that would otherwise have been an easy task or a pleasure.

VALUE OF SIMPLE FORMS AND SINGLE IMPRESSIONS.

The child trained from the first according to the principles of Fröbel (who held, together with Locke and Rousseau, that necessity is the mother of invention), that child is not spoiled nor confused by many toys of miscellaneous shapes; he has received clear impressions from a few simple, concrete forms, namely, the ball, the cube, and the cylinder, called the "second gift;" an accurate picture of solid forms is produced on his mind, so that he can recognize them everywhere in his surroundings; they will be starting-points for other forms which he has to learn by-and-bye. This clearness is, in Fröbel's opinion, of great importance: it has also a moral bearing, for the child is not exacting, but is content to make the most of small means.

The solid form is the most tangible to the child, and the most easily distinguished by him; less tangible are the surfaces or planes which, in systematic order, come next to the solids, as they are their faces or parts. In the Kindergarten they are represented by square and triangular tablets, which are in right proportion to each other, and accurate in angles; these tablets of coloured wood or card board can easily be arranged into symmetrical designs, and, as such, they remind us of inlaid wood and stone work, of mosaic, floor-cloth, carpets, and wall-paper. Architecture, with its decorative art, with its mason's, carpenter's and glazier's work, has its elements in Froebel's occupations, and why? Because the material which he uses is accurate and geometrical; it is not fanciful and confused, but regulated by a mathematical plan, similar to that which the bee and the spider instinctively follow out in their structures.

THE AESTHETIC DEVELOPMENT OF THE CHILD CARED FOR.

The crystals of snow and of precious stones were in Fröbel's mind when he provided us with such means of guiding the children's inventions and combinations, thus establishing a harmony between our teaching and the beautiful forms of God's creation. Indefinite and fanciful materials would not lead us direct to the source of beauty and of truth. The sense of the beautiful is early roused, and the child soon appreciates order and fitness of arrangement in form, colour, number, and sound.

Good taste will become natural, and will not have to be acquired by later efforts, neither will bad taste have to be corrected. Nature's forms are true: that is why Fröbel offers them to the child; moreover, he follows Nature's laws when making use of them; he builds his forms of bricks so that they seem to grow out of each other; he adds nothing but what is in the nature of the material, or can be developed from it. Thus his Kindergarten occupations are not a heterogeneous mixture of toys like those in a toy-shop, but a logical sequence from the whole to the parts and then from the parts to the whole again.

Just as he derived the surfaces from the solids, he derives the edges or lines from the surfaces, and these edges or lines he utilizes again in various ways; we see therefore among the Kindergarten occupations the line made use of in his course of drawing, or more tangibly illustrated by threads and sticks to make it plain to the power of vision and to the mental stage of discrimination in the child. The concrete must precede the abstract.

Paper-twisting, stick-plaiting, stick-laying, the jointed lath, pea-work, ring and thread-laying, drawing and sewing on card, bring the lines into every position and proportion before the child who handles them itself; hand and eye are trained; it makes its own discoveries while measuring, arranging, combining the given material. The beautiful outlines of leaves, flowers, animals, as well as of works of art, are henceforth a delight to the child.

As Fröbel dealt with form, so he deals with colour, sound, and number, for which he devises occupations and opportunities. The child early distinguishes objects by their colour, and delights in it; from want of cultivation, however, the power of distinguishing colour is often weakened or perverted, and bad taste, if not colour-blindness, may be the consequence.

Fröbel wishes to prevent this by offering his balls of pure and simple colours from the first as they leave a clear impression upon the child's mind. The first play has therefore its educational value, although it seems a simple amusement when the movements of the ball are accompanied by the rhythmical movements and by the simple song of the mother and the child.

Later on the child chooses colours for mat-plaiting, sewing with wool, or it mixes them when it paints simple designs and outlines of objects. Colour-blindness may thus be early detected and possibly checked. This would certainly be one advantage, but the application of colours to such designs as lead to decoration, to painting as an art, will certainly be of great value to every child; and if every one cannot become an artist in colour, every one may at any rate be led to admire the hues and tints of a landscape or the harmonious arrangement of colour in works of art. Why do we pity a blind person, if it is not that he is deprived of the pleasure colour affords to the eye, and of the power of distinguishing objects by their colours?

THE KINDERGARTEN OCCUPATIONS CLOSELY RELATED TO TECHNICAL TRAINING.

A closer survey of Kindergarten occupations may help us to appreciate their value in relation to the work that can be derived from them, and we hope we have shown that Technical Education is closely connected with them. The Kindergarten viewed in this light, commends itself to the notice of employers in every country. "The difference between the work of the adult and that of the child lies in the more skilful execution and the more matured thought of the adult, as well as in the texture of the material used; but it is easy to trace the connection between the element and the finished design. To a child, we give material not only softer and more pliable, but in smaller quantity or of smaller size: such material it can easily handle and master, which would not be the case if it was too stiff, too large, or too fine, or in fact unmanageable for the little fingers." (See: "The aim of Kindergarten Occupations.") By introducing the Kindergarten occupations into schools, and graduating them according to the ages of the children, we help to counterbalance their mental work, and to illustrate many abstract lessons by the manifold uses of the concrete materials. Hand work would rise in the estimation of many pupils if they themselves experienced the difficulties and the beauty of it. Many hours that would otherwise be spent in idleness may be filled by some manual employment, and much additional happiness and health may be procured by industry.

Eight persons took part in the discussion that followed. From the remarks by Mr. Severn, a few words of personal experience showing the actual results of the training upon his own child, are quoted; as, also, a part of the concluding remarks with which the distinguished Educator who presided, Mr. J. G. Fitch, LL. D., H. M. Inspector of Schools, summed up the subject.

(c) Mr. SEVERN, speaking in regard to the inferiority of young teachers, ventured to think that the more the Kindergarten system was adopted the more marked would be the improvement of the young teachers. He had noticed for some years that the Kindergarten system inspired children with a strong desire to teach. Some years ago he constantly found his little girl, who was about seven years old, and his little boy, who was perhaps a little older, trying to teach the baby geography. They got a paint box, and made the baby hold the brush and colour maps, and also made him repeat the names of the counties of England. Soon after that, one afternoon, when he came in, he found his little girl explaining to a small visitor how to make an equilateral triangle. As she had not a pair of compasses she made the necessary circles with a penny, and having made a spot at the centre she showed how it was done. Afterwards he found her trying to explain other simple figures in the same way.

THE KINDERGARTEN ATTRACTIVE TO CHILDREN.

His children at first liked the Kindergarten better than home. A gentleman one afternoon called who was very much interested in sport. His (Mr. Severn's) little boy, aged then about six years, asked him what gun he shot with, and he replied that he shot with central fire. The boy then said that his father shot with a pin-gun, and that he liked the pin-gun best, because the pin stuck out and showed when the gun was loaded. The visitor remarked that he was a clever boy, and he supposed went to school. The boy replied that he did not go to school, but he went to a Kindergarten. The visitor asked if that were not the same as school. "Oh! dear me, no," said the boy; "we go there to play." The visitor then asked: "Do not you do any lessons at all?" "Oh, no!" the boy answered. "If there were lessons it would be a school, and I would not go then." "Well, what do you play at?" The boy answered: "We play at all sorts of games, geography, history, arithmetic, modelling and drawing." He mentioned this anecdote to show that the English Kindergarten system — though it might not be exactly in accordance with the principles of Fröbel — was a source of real amusement to children; and he really did think that very young children ought to be taught in an amusing way or not taught at all. Their home lessons were of very great importance, but they should be made easy and comfortable. * * * .

THE CHAIRMAN (Mr. FITCH) said he thought he might congratulate the Section upon having had an extremely interesting and valuable discussion. Before saying a word as to the proceedings of the morning he ought to read a sentence which had been put into his hand by a lady: "I regret I did not hear the papers read, but I would like to say that from experience I am convinced that Kindergarten and object teaching with finger, hand, arm, and trunk exercises are the only teaching that should be attempted in schools for all classes. My children have had a Kindergarten governess since they were two years of age, and my son, who is five years old, told a builder that his mother would not take his house, and on being asked why, he replied, 'You have not disconnected your drain-pipe.' He then explained that the drain-pipe ought to be cut off, with an open gully underneath." That was only one example of the way in which this sort of teaching might be made an organ for the development of observation in young children. Any one not convinced of that before must have been convinced of it that morning.

TRAINED TEACHERS ESSENTIAL FOR THE KINDERGARTEN.

With regard to the necessity for trained teachers, a point which had been urged with great force, the Chairman observed that Fröbel's method was not a mechanical art which could be acquired by purchasing a shilling handbook descriptive of his methods, or by buying a box of models. It was a philosophy, a theory, a principle. It required to be learned by those who had thorough sympathy with childhood, and who had something of the spirit of Him who said, "Take heed that ye despise not one of these little ones." He was sure that unless they could get a good supply of thoroughly sympathetic and well-qualified teachers, they would never do what they were aiming at. Therefore the true solution of the difficulty was to make the principles of Fröbel more intelligible to those who were to be the teachers of the next generation. He was glad to know that in training colleges, from which the large majority of their teachers went out, increased attention was given to this subject. No training colleges had done that better, or were earlier in the field, than those connected with the British and Foreign School Society, and they would, in the afternoon, have the advantage of hearing from Mr. Bourne, the active secretary of that society, what had been done, and what might be done under existing conditions. He would suggest to them that they must not be impatient. They could not deal with a great question like this except with such instruments as they already had. It must be remembered that it took a long time to fill the schools of England — the eighteen or nineteen thousand elementary schools — with well-qualified teachers. They must therefore proceed cautiously, and not be disappointed if the progress made were comparatively slow. He for one, having had occasion to watch the growth of this movement for many years, was only too thankful at the rapidity of the progress which was being made.

IMPROVEMENT IN ALL INFANT SCHOOLS DUE TO THE KINDERGARTEN MOVEMENT.

Every infant school that he had visited, though very far from the ideal which had been sketched to-day, was distinctly better, and on its way to much greater improvement, owing to the discussions and observations that had been and were being made through the press and through public meetings, through the efforts of the Fröbel Society, and of such teachers and writers as they had had before them to-day. There was great reason for congratulation, and if their efforts were directed steadily to the training of teachers, what they wanted to achieve would before long be attained.

He had been particularly struck with the valuable observations made by M. Buls, and he hoped they would be presented to the members of the Conference in a permanent form. That gentleman had shown that Fröbel's own personal experience was necessarily rather limited, and that while his principles were capable of universal application, the particular way in which they should be applied depended very much upon the country, and upon the special surroundings of the children. Do not let them suppose because Fröbel was so wise and so far-seeing that he had exhausted the whole subject. Do not let any Fröbel teacher suppose that there was no room for further development, and for that adaptation to special needs and requirements which was spoken of so forcibly by M. Buls.

From the paper to which the chairman referred, as the one to be read by the Secretary of the British and Foreign School Society, the following passages are taken; the first, as showing the very large number of very young children who are sent to the English schools, and also a paragraph showing that the very large proportion of all children in the schools are under thirteen years of age. It is these few years of school life that are enjoyed by the great majority of children educated in the public school, which intensifies the importance that should be given to infant and primary instruction.

It is because, in this country as well as in England, so large a proportion of children leave school before reaching fifteen years of age that a vast amount of educational talk is fruitless. Men are talking and growing excited over educational questions which concern only youth of fifteen years of age and upwards, while the majority of school children have, long before reaching that age, ended all their school days! Certainly, in this view, too much attention cannot be given to the very youngest pupils, and the training of the infant and primary schools is of far more importance to the country than the putting of a few boys of fifteen years of age, and upwards, in Manual Training Schools.

In all other matters sensible men recognize the paramount importance of laying sure foundations, but, in the most important of all earthly matters, the building up of the character of the coming generation of men and women, they seem, for the most part, to ignore this fundamental truth; and to think that nurses, servants, and the poorest paid teachers, are fully adequate to give all the instruction needed by the younger children. To those who realize how much more difficult it is to unlearn, than to learn: the first shaping and development of the awakening intelligence of the child seems by far the most important work of education. Such enlightened educators would secure the wisest, best trained teachers, for the youngest children; but the wisdom of school committees, school boards and of parents — almost universally — seeks the cheapest teachers for younger children!

A mistaken economy whose results are far more destructive than those of ordinary wastefulness.

(*d*) *INFANTS' SCHOOLS UNDER THE CODE OF* 1884.

By Alfred Bourne, B. A.

It may appear strange that the British and Foreign School Society should confine its exhibition to the illustration of a single branch of school work; that a society which has been labouring for 76 years to promote universal education, whose principles of local government and religious freedom have been taken as a model for the School Board system inaugurated 14 years ago by the Legislature, and whose Training Colleges educate nearly one-sixth of the trained teachers of the country for all classes of schools, should, as far as the Exhibition and Conference are concerned, ignore all but Infants' Schools, and give special prominence to the Kindergarten system. The limitation, however, is quite consistent with the Society's traditional policy. The Committee was first formed in 1808 to develop and spread the Lancastrian system at home and abroad, in the belief that the methods of Joseph Lancaster would be found to be of universal application — as desirable for one country as for another; and the Society has been more concerned during the three-quarters of a century of its existence to discover and recommend methods by which education may be improved than to hold any gigantic operations in its own hands. It has always aimed to stimulate and direct local effort, meanwhile testing and commending any new and "more excellent way" which might be able to prove its excellence, and show itself to be consistent with the fundamental principle of civil and religious liberty.

INCREASING ATTENDANCE IN INFANT SCHOOLS.

Several reasons may be alleged for giving special prominence at this time to questions connected with Infants' Schools. There is, first, the actual number of the children who are sent to school under 6 years of age. This number is given for England and Wales in the latest returns of the Committee of Council as 841,128 in 5,962 departments of schools. There is, further, the fact that the number is steadily increasing. In 1874 the number of children under 6 years of age on the registers of schools receiving grants from the Education Department was 617,910. The increase is 36 per cent. in 10 years. It must be remembered, too, how large a proportion of our population has its home in large cities, overgrown towns, and crowded neighbourhoods, away from the sweet, bright, and wholesome influences of the fields and the flowers. The little ones who are gathered into the schools ought to be specially cared for, to counteract the depressing influences outside. Are we doing our best for this rapidly increasing host of baby scholars? Does our treatment tend towards the healthy development of body and mind, the formation of good tastes, disposition, and character; or are we embittering their young lives, and putting a drag on future educational progress by laying upon them burdens heavier than they can bear? Whatever may have been the case under previous codes, the Code of 1884, with its commentary in the instructions to inspectors lately issued, seems likely to give satisfaction to teachers of infants. * * * .

IMPORTANCE OF KINDERGARTEN TRAINING.

This, then, is the time for those who approve of the Kindergarten system to put forward its claims to attention, to expound, exhibit, and exemplify. For one thing is certain: we can no more afford to waste the time before 6 years of age than the cultivator of the soil can neglect the preparation of his fields. The early years are very precious, and their use or abuse will be felt all through school life and afterwards. The school age is short in England among the lower classes. Only 12.32 per cent. of the scholars on the registers in 1883 were over 12 years of age, and only 4.52 over 13. If there is to be education worthy the name, some, and no insignificant part, must be done in the Infants' School. And that education must be good — better than it has been — if we in this country are to maintain the English prestige, and the manufacturing pre-eminence which natural causes have given us, admits of no doubt."

Much, which refers to the details of the requirements of the English code of regulations, is here omitted; as of no special value to American Educators. The general statements in regard to the merits of the Kindergarten, *per se*, are given ; because they are of universal application and interest.

I am pleading for the latter course — for the Kindergarten as a preparation for the school. Let us have for the little ones happy home-like places with plenty of room, plenty of fresh air, plenty of light, varied forms of beauty, and nothing ugly or slovenly, or suggestive of grossness or selfishness or misery — gardens in which the human plants will grow. Let us have a sufficiency of loving teachers touched with a feeling of childhood's weaknesses, with "hearts at leisure from themselves to soothe and sympathize," and glowing with delight at the budding of higher nature, with minds sufficiently enriched and active to excite and satisfy the curiosity of awakening intellect. Let us have organized and well directed play, so that every limb may have its exercise, and the various phenomena of nature and the occupations of the grown-up people around may be associated with the pleasant activities of the restless and growing children. Let us have carefully graduated work for enquiring eyes, and listening ears, and busy fingers — work which shall at once awaken enquiry and satisfy the natural craving for results, while it teaches lessons of patience and perseverance, cultivates accuracy and dexterity, and rewards industry by creating new and higher ideals, and opening up new fields for exertion. "The child" (says a wise lecturer on teaching) "who has learned in infancy to look steadily at the forms and aspects of things near him is, later in life, a better observer of nature and student of physical science. He gets more enjoyment, and more culture, from seeing pictures or fine scenery, than if he had been accustomed to gaze aimlessly and vaguely at the things around him. He who has been taught by exercises ever so childish, steadiness of hand, and precision of touch, is better fitted hereafter to be a draughtsman or musician, and no training of the ear to the finer difference of vocal inflection and expression is without a very important bearing on literary perception and taste. We know that the development of greater sensitiveness to sight and sound is accompanied, almost necessarily, with the development of intellectual power; that outward expression is a great help to inward clearness; and that whether we call the quickening of physical sensibility a part of lower or of higher education, it is too important a factor in the life and usefulness of a man to be disregarded by any teacher whether high or low." What we ask is that a child may have some such development before it is set to school tasks. Let the preparatory work be thoroughly done, and the child will come to school-work ready to learn rapidly, and go on step by step to the highest education which can be put within its reach. * * * .

DIFFICULTIES WHICH DELAY THE SPREAD OF KINDERGARTENS.

The real difficulties in the way of the spread of Kindergartens are to be found in insufficient premises, insufficient staff, and a lack of appreciation on the part of teachers of the rational method of educating little children. Small classes, each with a capable and sympathetic teacher, are expensive, yet they are essential to the study of individual peculiarities and the adaptation of the training to each of the little ones. This is the gist of the matter. And this difficulty will not permanently stand in the way. No money is so well invested as that which is laid out in making each successive generation better than the preceding one. And the value of the Kindergarten system will appear more and more. In the words of one of its ablest exponents, "Fröbel's ideas are beginning to spread in England. We are noting more than formerly the fact on which he laid so much stress, that defects in power and character may be greatly traced to original defects of training. We are beginning to believe, therefore, in the immense and lasting strength of early influences. And the value of a right guidance of infants grows upon us, too, as we more constantly bear in mind that, as Fröbel used to say, the child is the seed-corn of the future. We *must* look at life as a linked whole. Those babies that sit so quietly in their mothers' arms, those little ones in pinafores and jackets, that shout, and laugh, and quarrel around us, will be the statesmen, the teachers, the mothers, the shopkeepers, the handicraftsmen of thirty years hence. The infant of to-day may have to edit the newspaper that it now delights to tear and crumple, to legislate for the school in which it is at present the youngest pupil, or to analyze the snow crystals that it merrily stretches out its hand to catch. The greater part of the business of the world will be in the hands of these children. No efforts then can be too strenuous that their minds may become wise, their conscience steadfast, their hearts unselfish and kind. And it is surely important that all who desire such an end should give careful consideration to the thoughts and plans of Fröbel, a man who spent his years in trying to promote rational education simply from an ardent wish to help towards the realization by mankind of a high ideal of life.

A very excellent paper on "The apparatus needed for play and for instruction," by Miss Celia Ellis, followed, omitted here because similar information is readily accessible from Kindergarten handbooks. A very valuable paper on "Infant Schools in France" was then read by "Madame Dillon, Inspector General of Infant Schools, France," giving the history of their growth from 1770, the date of the opening of the "Knitting School" in the Vosges Mountains by Pastor Oberlin. A discussion followed. A few remarks of one of the speakers are here quoted as bearing directly upon some of the physiological benefits of proper infant training:

PHYSIOLOGICAL RESULTS OF INFANT TRAINING.

(*e*) MR. **ROWLAND HAMILTON** said he thought that one of the best results which had arisen from the decision at which the country arrived some twenty years ago, as to bringing education within the reach of all classes and capacities, was this appreciation of infant culture. Modern physiology had come to the conclusion that there were certain pursuits which were most fittingly acquired at the very earliest age. And out of these primary perceptions more complex and advanced conceptions were built up, reaching at last the highest exertions of which the human mind was capable. It was impossible to overestimate the advantages of that early training which began even before the child could speak, and was gathered by instinct from the well-ordered mind of the mother. It was this which more than anything else modified that idea of heredity which had lately been so much talked about. By beginning in the earliest stages very much could be done to supply early deficiencies, and so put a curb upon those faculties, and upon those desires which, by reason of their excess, were likely to disturb the future of the child. He remembered that Mr. Routledge, one of the School Inspectors for East Kent, wrote to the *Times* some five or six years ago, when a great deal of discussion was taking place in reference to colour blindness, stating that in his experience he had met with no case of actual colour blindness where a child had received instruction in a good infant school. This accorded with the experience that it was very rare indeed for any one of the faculties to be totally wanting, but it was by no means uncommon for one of them to be so far deficient that the exercise of it required peculiar labour from which we all instinctively shrank, whether in childhood or in mature age. These were matters which should be the subject of careful training. Attention should not be devoted solely to the development of those faculties which were strong, but there should be some system of persuasion by which irksome exercises might be rendered as pleasant, as they were strengthening and stimulating.

VI.

VIEWS OF SOME AMERICAN EDUCATORS IN REGARD TO KINDERGARTENS.

A few extracts from papers read in 1886 before a recent American conference follow, showing the rapid growth of free and public Kindergartens in the United States. These papers are supplemented by the report of a well-known superintendent of the schools of one of the most thriving inland cities of Massachusetts.

While, as already stated, no attempt is here made to treat exhaustively the subject of Kindergarten, the literature alone of which is extensive, the following extracts from the report made to the National Conference of Charities and Corrections at St. Paul, Minnesota, in the summer of 1886 give a summary of the growth and extent of the movement in the establishment of free Kindergartens in the United States to that day. This report appears in the official publication of proceedings.*

(*a*) *FREE KINDERGARTENS.*

By CONSTANCE MACKENZIE.

The past thirteen years have been memorable for the free kindergarten movement in the United States. Previous to that time, the work was largely private, experimental, and within the limits of the well-to-do classes. "Kindergarten" was the shibboleth of the few. It was new, strange, mysterious, and consequently made slow progress, often slipping back, often standing still. It needed free work, on a broader basis, to insure it careful, unbiased investigation and adoption by the many. The year 1873, which found the new educational movement scarcely astir, was to witness the initial steps of a large work in the right direction. In the fall of that year, Miss Susan E. Blow of St. Louis, Mo., made the generous offer of her services to the Board of Public Schools of that city, consenting to supervise and direct an experimental Kindergarten, if the board would provide the room and the salary of one kindergartner. * * * . At the end of five years there were two Kindergartens in nearly every first-grade public school in the city; and, to-day, St. Louis gives training to over four thousand little children, preparatory to sending them into the public schools.

From 1873 until 1877, St. Louis stood as the sole representative of free kindergarten work in the country. In 1877, Mrs. Quincy A. Shaw opened two Kindergartens in the vicinity of Boston, Mass., at her own expense. She gave largely, also, toward the support of two in Cambridge, and in 1878 opened fourteen others, in 1879 twelve more. Since then, changes have been made; and there are at present twenty in and near Boston, with an enrolment of about thirteen hundred of the poorest children. These are, as they have been from the first, supported solely by the liberal charity of Mrs. Shaw.

Then follows a brief summary of the work done in San Francisco, credit for the initiation of which is largely given to an address delivered in 1878 by Prof. Felix Adler of New York, urging upon the citizens the urgent need in their city of a system of free Kindergartens. This beginning was wisely supplemented by the efforts of "Mrs. Sarah B. Cooper, and her Bible Class," so that 1,000 poor children are now reported as attending free Kindergartens.

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*Proceedings of the National Conference of Charities and Correction, at the Thirteenth Annual Session, held in St. Paul, Minn., July 15–22, 1886. Edited by Isabel C. Barrows, Official Reporter of the Conference. Boston: Press of Geo. H. Ellis, 141 Franklin Street. 1886. Pp. 457.

Chicago followed in 1879; Mrs. E. M. Blatchfield was the pioneer in this city, where 2,300 children are reported as attending these schools.

In Philadelphia, the same year, Miss Anna Hallowell, who had been much interested in the Boston experiments, began the work. The aid of President Steel of the Board of Education and of Superintendent MacAlister, in promoting this movement is gratefully acknowledged. One thousand children are reported as in these schools and the plan of establishing free Kindergartens, as a part of the city school system, is urged upon the Board of Education.

In Cincinnati, free Kindergartens were begun in 1879; 300 pupils are reported in attendance.

In 1880 the city of Milwaukee, Wisconsin, took up the movement with Mrs. Sarah A. Stewart, a former principal of one of the public schools, in charge of the first Kindergarten; 1,550 children are reported as attending the City Kindergartens.

New York can probably boast of a greater number of free kindergartens within her limits, outside of kindergarten associations, than any other city in the Union. Oakland and San José, Cal.; Denver, Col.; Hartford and New Haven, Conn.; Portland, Me.; Pittsfield and Florence, Mass.; Louisville, Ky.; Baltimore, Md.; Detroit, Mich.; Minneapolis, Minn.; Buffalo and Oswego, N.Y.; Providence, R.I.,—are, in addition to the cities cited above, giving free training to more than two thousand children in and out of institutions.

As a basis for this report, a carefully prepared set of questions, asking for information on free kindergarten work, was distributed to all who were believed to have had practical experience. These were responded to with a promptness as gratifying as it was helpful.

An examination of the replies shows an average age for each kindergarten child of four and a half years. The classes reached range from those in "moderate circumstances" to "our future criminals," with a strong majority in favor of the latter. Between these two extremes are "children of the working classes," "the poor," "the very poorest," making the average class of those of "low and degraded parentage." From these, we exclude the public school kindergartens of St. Louis and Milwaukee.

The replies to a series of questions showing the influence of this training in various directions are given. The report closes as follows:

HOW KINDERGARTEN TRAINING DISCOURAGES PAUPERISM AND CRIME.

Kindergarten training continued would aid in reducing pauperism by developing self-helpful activity. The beginnings of manual training are part of the kindergarten. The child's hands and eyes are ever busy to produce and observe.

Nearly every trade and art has its place in Fröbel's system, which gives the child the alphabet of them all by calling upon him to master the materials and principles common to all. Hence, the manual training side, developed and continued, would give all people the desire for and the power of self-supporting activity, and in this way reduce pauperism.

Others answer that the kindergarten does prevent crime and pauperism: "by teaching the child to respect the rights of others"; "by developing the power of invention, with ability to execute"; "by preventing idleness, and encouraging industry"; "by training the hand to work, and the mind to love and respect that work"; "by training the child to be self-dependent"; "by teaching energy, despatch in work, and diligence."

From 1873 to 1886, the number of kindergarten children in this country has been steadily increasing, from a handful of one thousand, to twenty thousand. The kindergarten system is now old enough and strong enough to speak for itself. The prejudice of the few. who *will* not see the hurtful zeal of unwise advocates, who claim for it more than it claims for itself, though it did much to hinder its first uncertain steps, now holds it back no longer.

With the practical experience of public kindergarten work contributed by two cities;* with a State law passed within the last few months in Connecticut, to the effect that three years shall be the legal minimum age of admission to the public schools of that State; with progressive men and women awakening to a realization of the value of good *early* training for children,—the future is full of hope that the kindergarten will become the basis of public education, as well as the introductory step in all work for the reduction and prevention of crime and pauperism.

The Rev. R. Heber Newton, D. D., of New York, followed with a paper on "The bearing of the Kindergarten on the prevention of crime." A paper which begins with this sentence "Education is the true preventive of crime, and the foundation of a normal education lies in the Kindergarten." At the close of his interesting description of the actual work and influence of the Kindergarten, among which he instances the "laying the foundations of industrial skill", he says: "The gist of the whole matter lies in the one word with which I opened." He repeats the sentence and adds: "The State would find it a cheap investment to found free Kindergartens as a pre-primary department of our public school system. What it would spend there it would save in our prisons."

(*b*) *THE KINDERGARTEN IN RELATION TO PUBLIC SCHOOLS.*

BY SUPERINTENDENT A. P. STONE.

[A Report presented to the School Committee of Springfield, Massachusetts, by the Superintendent of Schools, October 30, 1886.]

To the School Committee:

GENTLEMEN — At your regular meeting in June the following vote was passed:

"Ordered, that the superintendent be requested to investigate and report to this board, at the October meeting, whether the kindergarten system, or any portion of it, can be adopted in the Primary grades of our schools; and, if so, at what expense?"

There is an opinion somewhat prevalent, that the kindergarten cannot be legally supported at public expense, insomuch as it is not, strictly speaking, a school, although it is as much an educational agency as any school is, or can be. The statutes of Massachusetts nowhere define a school, as such. They require schools to be established and kept for the public: and they specify certain branches that must be taught; but our highest courts have decided, more than once, that those studies do not constitute a definition or a limit of the schools, but that they are the minimum required, and that towns and cities have a broader power which may be used to extend the province and scope of the schools. There is, therefore, no legal objection to the public support of the kindergarten. As a matter of fact one was established by the city of Boston in 1870, and was supported for several years from the school appropriation.

A CONCISE STATEMENT OF KINDERGARTEN METHODS.

The kindergarten is a peculiar system of elementary training, designed to lead the child by simple and natural methods to a voluntary exercise of its powers, so as to make those powers self-active. Books are not used and no attempt is made to furnish the children with words or ideas. Advantage is taken of their natural fondness for play, to make their surroundings such that they will be constantly interested, and will take delight in whatever is to occupy their minds; and then by a number of objects, called gifts, they are directed in a series of occupations that are calculated to give a gradual and harmonious development of all the powers of the mind. The child is not dealt with as a passive being, but as one whose self-activity is to be encouraged and directed. Abstract ideas and words are discarded, and the learner works at first through the senses alone.

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* St. Louis, Missouri; and Milwaukee, Wisconsin.

Good habits of observation are cultivated, and gradually the children begin to acquire and express ideas of matter, color, form, position, direction, distance, etc. Physical exercise, ventilation, personal cleanliness and the control of the passions and feelings receive constant and careful attention. The children are not taught individually, but in groups, that they may become unselfish and learn to submit their wills to the greater number of their fellows. Discipline is not maintained by repressive measures, but by keeping the children pleasantly occupied, and by suggestions rather than by commands. Willing obedience and healthful moral training are constantly the leading objects aimed at.

RESULTS ATTAINED BY KINDERGARTEN TRAINING.

Those who have studied this system and observed its results generally concede the following:

I. The children trained by it are more submissive to school discipline.
II. They are more intelligent, more exact observers, and grasp ideas more readily than others.
III. They make greater progress in school work, especially in arithmetic, drawing, the sciences, and in the use of language to express their own ideas.
IV. This kind of training, better than any other, leads directly to industrial education.

The impression usually left upon the mind of any careful observer, by a group of kindergarten trained children, is that they are very cheerful, intelligent, active, and exceedingly fond of school work. In Europe, the period most appropriate for this kind of training is thought to be that from the age of three years to the age of six or seven.

REQUISITES FOR A KINDERGARTEN TEACHER.

None but those of rare qualifications can succeed as teachers in this work. Indeed, it would seem that a kind of instinct and a genius for teaching, as well as careful training, are here necessary for the highest success. But in the hands of a teacher, with such endowments, the kindergarten, whether judged in reference to its principles and philosophy, or its results, is probably one of the most successful educational agencies ever put in practice. But it nevertheless remains true, that a poor kindergarten teacher will inevitably make a stupendous failure. But the kindergarten is not a school, and a school is not a kindergarten. Neither is the kindergarten a substitute for home training, although it is intended to round out and complete such training.

THE KINDERGARTEN AND PRIMARY SCHOOLS.

Can this system be introduced into our Primary schools?

I see no obstacle to its introduction in this way: Let there be established one kindergarten in connection with one of our Primary schools, where there is sufficient room for it and where it would become a kind of feeder to the school, in which the results of the training, as shown in subsequent school work, could be carefully observed and tested. The probable cost of such a trial would be about as follows:

For teachers, from $500 to $600 per annum; for kindergarten gifts, $70; for material used up, $60. These last two items are sufficient for a period of three years. The cost of furniture, tables and chairs would be about $35. This would make a total outlay to begin with, for the first year, of from $665 to $765. For subsequent years it would cost less, probably about $540 to $640 a year. This would provide for a class of 25 children, the usual limit of a kindergarten class. If the teacher is a good one, subsequent classes could be added to this without much extra expense for teaching, by employing unpaid assistants who would be willing to work gratuitously for six months for the sake of preparing themselves for kindergarten teachers.

Kindergarten training will shorten the time necessary to complete the Primary school course. But I do not think that American parents will generally allow their children to be taken from their homes for this purpose, at the age of three years. Better say four and one-half or five years; and then lessen the kindergarten course.

An attempt to introduce this system at once into all our Primary schools would meet with two objections; the first of which is, the large expense necessary to provide additional rooms, appliances and material, furniture and teachers. The amount of this expense can at present be only conjectural, but it would certainly reach a number of thousand dollars. Then, as a second objection, there is the difficulty of obtaining a sufficient number of well qualified teachers, one of the greatest obstacles everywhere to the success of the kindergarten.

THE PRIMARY SCHOOLS MAY BE MODIFIED BY KINDERGARTEN METHODS.

But my belief and hopes in the possibilities and usefulness of the kindergarten are not in the adoption and use of it altogether in its present form. Education is a progressive science, and some of the best features of our schools to-day are the results of changes and improvements that have been made by the adoption of more practical ideas and methods, and by discarding things that are irrational and useless. And why should the kindergarten be regarded as a fixed institution and a finality? Why cannot some of its best features be incorporated into our Primary school and made to harmonize with whatever of good there is already in them? Many Primary schools have already been modified and improved in this way. Kindness rules the little children more than formerly, the use of books is delayed, and objects of various kinds are used for illustration and to lead the pupils on to do their own thinking. It is possible for the city to train her own Primary teachers at no great expense. Let those teachers be imbued with the kindergarten spirit, one of the best things about the institution; let the children be taken at the age of five years and trained for a year without books, but with some of the gifts of the kindergarten and other similar appliances. Upon this training a better system of instruction may follow that will utilize some of the best features of the kindergarten.

These last remarks are my answer to your inquiry whether any portion of the kindergarten can be introduced into the Primary grades of our schools."

PAPERS AND DISCUSSIONS BEFORE THE KINDERGARTEN DEPARTMENT OF THE NATIONAL EDUCATIONAL ASSOCIATION AT CHICAGO, JULY, 1887.

The latest public expression by American Educators concerning the Kindergarten, occurred during the holding of the annual meeting of the National Educational Association, in Chicago, in the proceedings of the Kindergarten Department of that association. It may be of interest to compare the papers and discussions at Chicago in 1887 with those of the conference held in London in 1884, given in Paper V. of this Appendix, as affording a comprehensive view of the attitude of educators generally towards Kindergarten training.

It is, of course, principally in the relation of the Kindergarten both to Industrial Education generally and to Industrial Art training particularly, that so much space is given to this topic in this Appendix.

The proceedings and addresses of the Kindergarten Department are of interest in connection with the papers on Kindergarten just preceding.

The following summary of proceedings recites these papers and discussions:

KINDERGARTEN DEPARTMENT.

FARWELL HALL, *Chicago, Ill., July* 14, 1887.

The department was called to order at two o'clock, p. m., President W. N. Hailmann in the chair.

In the absence of the regular secretary, Miss Alpha O. Smith, of Iowa, was appointed secretary *pro tem.*

The president then delivered the annual address.

Miss Clara A. Burr, of Oswego, N. Y., then read a paper on "The Value of Kindergarten Training in Normal Schools."

Miss Kate L. Brown, of Boston, followed with a paper on "The Application of Froebel's Educational Principles in Primary Schools."

In the discussion of these papers, the following took part: Mr. Bothwell, of Albany, Miss Curtis, of Kansas City, Miss Dickey, of Utah, and others. * * * .

SECOND SESSION.

The department met in the same place, on Friday, July 15th, and was called to order at two o'clock, p. m., the president in the chair.

Miss Eleanor Beebe, of Louisville, Kentucky, read a paper on "The Kindergarten in the Education of the Blind."

Discussion followed, participated in by Mrs. Little, of Wisconsin, Mr. B. B. Huntoon, of Kentucky, and the president. * * * .

ALPHA O. SMITH,
Secretary pro tem.

(c) OPENING ADDRESS.*

W. H. HAILMANN, PH. D., *Superintendent of Schools, La Porte, Indiana.*

This is the last time I shall have the honor of addressing you from the chair. Under these circumstances, it may be well for me to reiterate a few points which I have from time to time brought before you. * * * .

If kindergarten children do not fit the primary schools, it may be that the primary schools are at fault, or it may be that the kindergarten is at fault.

* * * Of course the kindergarten system must not be judged by any one kindergarten. Each kindergarten is but an approach to the ideal. There are good kindergartens and bad kindergartens, just as there are good schools and bad schools — we do not conclude from this that school systems are a failure. There are good hotels and bad hotels, good churches and bad ones, good men and bad men. Because one man is bad, we do not turn against all manhood. This would be superficial judgment.

CHARACTERISTICS OF A GOOD KINDERGARTEN.

Permit me to direct your attention to a few reliable criteria, however. In the first place a good kindergarten in all its work is preeminently religious and ethical. Work in the kindergarten from beginning to end has reference to the religious promise in the growth of the child.

Again at every point of the work the teacher must act in full sympathy with the child, must place himself on the child's plane, and from this labor toward the child's (the human) ideal. If the kindergartner sees in the gifts and occupations ends instead of means of instruction, if she makes weaving, building, or folding, matters of instruction, and subordinates the child to these,— she has not the spirit of Fröbel.

It was said yesterday that we must go down to the child. I would say, go up to the child; lift yourself if you can to his level of innocence, of singleness of purpose, of pure and simple enjoyment of all things; follow the child, be led by him; carefully and thoughtfully seek to know the direction in which he drifts,— then help him in his upward tendencies, and guard him against all that looks downward.

Again, the kindergarten is essentially ethical. All its work must build up character,— benevolence, justice, righteousness, in every sense of the word. For this purpose its surroundings are adjusted. "Then," say some of the critics, "you do not propose that children shall know anything?" Know! We want them to know vastly more than they know now; their knowledge shall not be merely verbal. but practical, entering the pupil's very life.

If the kindergarten has any quarrel with the school — though I cannot see that it has,— it is not that the school teaches too much, but that it fails to put into the learner's life the knowledge it does teach.

THE KINDERGARTEN PRACTICAL, NOT THEORETICAL.

We have been accused of being theoretical and visionary, but it will be found that the school is eminently practical. It says, "Go to life, to nature; come in contact with things, gather experience, make experiments; think and do; whatever you learn, use." Is this theoretical and visionary, or should not those terms be rather applied to the bookish school of grammarians, of the ready-made sciences?

Fröbel does not condemn science, but uses it. He would lead the learner to use all his knowledge for the glory of God and the good of mankind. He seeks unity in all things. Matter and force, body and mind, the spiritual and physical, work

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*Reported by the Secretary *pro tem.*

hand in hand. Thus, too, there is to him no antagonism between science and religion, between light and love. The one seeks the Most High from without, the other seeks for him from within. In everything Froebel seeks unity, an inner and an outer harmony, training the lower for the sake of the higher possibilities, and all for the highest ideal.

I was asked in the council, "But, if a child has a good memory, would you go at something else and not develop that?" I would develop that to its legitimate outcome, turning the memory into the intellect, into insight, into conduct. If we stifle memory before it reaches conduct, we stifle the child's soul.

Are not men's principles at variance with their conduct? This should not be so; man should be in harmony with himself in all his life utterances. So, too, he should be in harmony with mankind, with nature, with God,—obeying their laws, limiting himself by the righteousness that binds him to these.

A few words of warning to the kindergartner may not come amiss. She is exposed to many dangers, and among them one of the most serious is self-adulation. She is not a better teacher because she professes Fröbel, and can handle the gifts. There must be within her the living spirit of growth. I have seen better kindergartners in district schools where the name of Fröbel has never been heard, than in many kindergartens which boasted of costliest outfits, and were labeled with Fröbel all over.

THE RESULT TO THE CHILD THE ONLY ESSENTIAL THING.

The child, not the first or third gift, is to be developed. I have seen children worried time and again for laying a stick in a way not in the books, although his way was much better. There is still too much schoolishness in our kindergarten, time tables, sequences, laws of opposites, logical development, and the like. They are beautiful in adult science, but only hinder child growth.

Again, many yield to the objection that the kindergarten makes work too pleasant to the child. And is there harm in this? Did Hercules gain his great physical power through physical worry? Was Siegfried worried into his superiority? Or was not his life one round of vigorous, cheerful, pleasant activity? And with us, does strength ever come from worry?

Is it probable that a child will work less for being cheerful? Why, if worry is the only price of work, then is work the activity of the slave, and play the activity of the free man. Shall your child be a slave? Children and gods play; in play man is most like God. Let the child play himself into harmonious, cheerful, beneficent, fully developed manhood, and womanhood, and work, true work, godlike, creative will be his heaven, his greatest joy.

One word more and I am done. Permit me to warn you against mere culture for its own sake, against culture that does not tend to action; against culture that admires itself for wasting life over the inane intricacies of a Browning, or that hovers over its treasures of learning or its art-love, in a miserly inactivity. The kindergarten wants culture, it is true, social culture, human culture, divine culture, but all of them in streams that lead outward and upward into truly beneficent, active lives.

The first paper on the training of teachers in Kindergarten methods is here given entire. The training of the teachers, as the Massachusetts people found in their efforts to introduce Industrial Art Drawing, is an essential preliminary to the successful introduction of new studies, or methods, in the public schools. If the advocates of industrial training are right in considering the methods of the Kindergarten as the best elementary training for their purposes, then they can hardly lay too much stress on the importance of having the public school teachers thoroughly trained in these methods.

(*d*) *THE VALUE OF KINDERGARTEN TRAINING IN NORMAL SCHOOLS.*

Miss CLARA A. BURR, *Oswego, N. Y.*

The question to be answered by the State normal and training school is, How in the prescribed time can the student be trained to such an appreciation of educational principles as will enable him to apply his knowledge to the education of others?

The attempt to answer this question has led to an endless chain of devices, each link of which possesses an identity of its own, because forged from the necessities of the special school. The chain binds together the entire system of State training schools, by the strong purpose to do honest work. A question of interest to one becomes the interest of all, therefore the first step in consideration of the question, how to secure higher professional training for teachers, is one of general interest.

Each training school has its standard of excellence and its special measures for attaining the end in view. Where can one be found, however, that does not admit, by its course of action, the fact that its work cannot be tested, until the student attempts to teach what he has learned? The management of the crude material, which is admitted to the State normal and training schools, causes difficulties that are unknown in the city training school; but the very fact of pupils of the city schools having been trained in a uniform high school system brings difficulties that are unknown to the State school. But in both city and State institutions the practice department alone reveals the defective training. This test will expose crude scholarship of State pupils, if it exists, and the mechanical teaching of those pupils who have been trained in large classes according to the public school system.

DIFFICULTIES CONFRONTING NORMAL SCHOOL PUPILS.

Perhaps in no department of the training school is it possible to do the young teacher such irrevocable harm as in the practice school. The difficulty of putting the mind in a twofold relation to the subject and the child to be taught is of such magnitude that it involves the whole art of teaching, and special attention should be directed to this point before the student begins to do practical work. Every department teacher in the training school should elucidate the principles of his subject, with the idea of having the pupil place himself in the relation of student and teacher. When this habit has been acquired in the ordinary recitation room, he is ready to attempt the experiment of placing his mind in relation to that of a child and to the subject which he is to teach.

Whatever the influence brought to bear upon the practice teacher, his first motive will be that of meeting the requirements of the supervising teacher, for he seldom feels free enough to think of the needs of the child, and never, in the beginning, has any appreciation of how to meet them. His failure to consider the individuality of the child is but the consequence of his own want of training and his inability to know himself. If it is true, as asserted, that the American public school system is a machine, then should the training schools root out the tendency to mechanical work by training students as men and women should be trained, up to the full measure of their capacity to understand the human mind. To do this the student must be placed under such conditions that he can readily appreciate what he must be in order to do.

The practice department does not afford opportunity for studying child life, because of the restrictions necessarily imposed. The teacher in charge of this department must pay tribute to the State, the city, to parents, to pupil teachers, and to the children. What wonder if her own sense of justice is dishonored, in her effort to pay the hundred weight of flesh demanded!

Since the practice school, which applies the final test, does not afford facilities to the pupil in training for a study of child nature, he must receive a diploma entitling him to teach, when the most important part of this work is yet unlearned. He must of necessity take it up without intelligence sufficient to guide him in preserving the child's individuality; hence his teaching is mechanical, and his school must be a machine where the child is not developed to the best advantage.

Nowhere can the opportunity be found for studying real children, excepting in the true kindergarten. The word "true" has significance in the fact that the American people in accepting the kindergarten must discriminate between the real and the imitation. Between the sunset upon Ontario's pulsating waters and the representation of the scene upon canvas, there is a mighty difference. One is felt, the other is studied.

A TRUE KINDERGARTEN DEFINED.

A true kindergarten is, then, indispensable in the training of teachers for the public school; and the pupil teacher should come directly under its influence and should, therefore, work in the practice school under the direction of the kindergartner. In order to direct this work the kindergartner should be a training teacher, with experience in public school work and its difficulties, and with a thorough knowledge of the normal course pursued by the pupil teacher. She should understand the application of Pestalozzian principles and be an expert in applying those of Fröbel. A comparison between the ideas of these two reformers will reveal the characteristic differences which should be illustrated abundantly through the children of the kindergarten. During this illustrative work the pupil teacher, as an observer, should notice what the child does, should discover the motive and draw an inference as to what this indicates, and determine what use this knowledge is to be to the teacher. Since each normal and training school should be conducted according to its particular conditions, although the general plan of work may accord with that of every other State training school, so the kindergarten of each of these training schools should have an individuality. Games and occupations should bear the impress of originality, which necessarily follows ideal work, and is the only kind of teaching that should be observed by the pupil teacher. The stereotyped work so commonly found in books and the imitation kindergarten, is most pernicious in its influence upon the teacher, the child, and the school at large. The object of studying the child in his natural environment is to learn the law that regulates his development, and the kindergartner must free herself from all trammels, in order to illustrate this law and to lead the child to that degree of development of which he is capable. Pupil teachers, as well as kindergartners, should be trained to an appreciation of the philosophy of Fröbel's system. There is not too much sentiment, but kindergartners often unconsciously fortify themselves behind a bulwark of false sentiment, and show a lamentable want of philosophy in their work.

THE KINDERGARTEN MUST BE RELATED TO THE PRIMARY PUBLIC SCHOOLS TO SUCCEED.

Unless kindergartners can be trained to a broad, deep conception of educational principles, and to recognize the fact that the kindergarten system is but the underpinning of the great educational structure, there can be no hope of having this system made a part of the public school. If this is not done, the kindergarten cannot be an educational factor. The State normal and training school, the fountain head, does and should refuse to recognize training work in the kindergarten, that is not put upon a basis that must command the respect of educators. Since the failure of young teachers is from want of power to apply their knowledge to the unknown mind of the child, then they must know the mind of the child, and since the only place where this knowledge can be gained is in the kindergarten, and since training schools demand philosophical work, here the conclusion is reached that through philosophical work in the kindergarten the training of teachers and the public school system is to be elevated. To train kindergartners and primary teachers to work in sympathy, and at the same time to keep the two lines of training distinct and yet related, both kindergartners and primary teachers, and the schools wherein they practice should be under the direction of the kindergarten training teacher. The course of study in the primary, junior, and senior grades should be related to that of the kindergarten, because all should be evolved from nature.

The law of relation, which gives to the kindergarten its spirituality, is even more advantageously applied in higher grades, and is the key that unlocks the secret of making work play and play work. Fröbel's gifts reveal this law so plainly that it seems almost tangible, and primary teachers readily appreciate its value when studied thus, and so a fe[illegible] to recognize it in their teaching, and through its application grow to a knowledge of the child.

RELATION OF THE KINDERGARTEN TO INDUSTRIAL EDUCATION.

The occupations of the kindergarten are unnecessarily stereotyped, yet as they now stand, they form a basis for any branch of industrial education that may be undertaken; and the primary teacher should understand this course, that she may be prepared to receive kindergarten children, and that she may the more readily execute the industrial work entrusted to her grade.

The effort to relate the kindergarten to the public school through lectures and disconnected work has proved hurtful rather than helpful. Pupil teachers receive about enough instruction to lead to a depreciation of the work of the kindergarten, and are ready to accept positions to teach as kindergartners or primary teachers, guided in their choice by the matter of salary, when their training and qualifications have fitted them for but one.

The admission of pupils to the regular kindergarten training class, who have not had normal training, is often advisable. They should, however, be sent to recitations in departments of the normal school that may have bearing upon the kindergarten, and give to it depth and scope. The standard of admission to the kindergarten training course should be higher than that commonly recognized, and more should be demanded of graduates than the completion of a course of manual training, familiarity with games many of which cannot stand an educational test, and sequences with gifts.

THE KINDERGARTEN METHODS SURE OF ULTIMATE APPRECIATION.

The faith exhibited by educators in their repeated efforts to sound the depths of Fröbel's philosophy, and its bearing upon education, only proves that it will yet be established throughout America. The failure to make the kindergarten as yet scarcely more than a preventive criminal measure is due largely to the failure of the State to make this department of training a feature of the normal and training school.

The State has not recognized the value of the kindergarten in training primary teachers, because time and favorable conditions have been wanting for proof of its worth. But the day dawns when wise legislation will secure the needed appropriation to put the ordinary primary teacher in possession of kindergarten principles, and to send out kindergartners who will work in sympathy with the public school system. Time alone can and will prove what can be accomplished through the mission of the true kindergarten in the training of teachers in the State normal and training schools of our country.

From the next paper which discusses at some length the relations of the primary school teacher to the kindergarten methods, and incidentally illustrates something of the ideals and of the practical workings of the plans of Fröbel, the following extracts are taken:

(*e*) *APPLICATION OF FRÖBEL'S PRINCIPLES TO THE PRIMARY SCHOOLS.*

Miss Kate L. Brown, *Boston, Mass.*

* * * We need to feel, first of all, the absolute necessity of the kindergartners and teachers drawing nearer together, and cultivating mutual knowledge and sympathy. There has not been, and is not even now, any vital and sympathetic union between these two stages of early education. Both the kindergartners and teachers have regarded their work as a separate, isolated thing. Each must do his work independent of the other, with scant reference as to any possible connection that may be between them. "The kindergarten is not a school, it has none of the school aims, it can have nothing to do with the school," has been the cry from some on the one side. By the primary teachers on the other hand, the kindergarten has either been ignored, or regarded with suspicion, some maintaining that its influence is detrimental to good work in the schools. All these objections are groundless, and show only misapprehension of the relations of things.

The kindergarten as a separate isolated fact, will never be more than a pallid little blossom, that scarce knows whether to live or die. Taken in its proper connection and relations with school life, it is destined to become a [illegible] flower, whose rich beauty is prophetic of even future bloom.

The deepest value of kindergarten training is not alw[illegible]parent in the kindergarten itself, but further on in school life, when [illegible] the well [illegible]ed reason and judgment act in conjunction, with every developed perception [illegible] on the alert, with an imagination at once richly dowered and sensitive. The kindergarten apart from the school is like the heart or brain separated from the body. The school apart from the kindergarten is a torso, a body shorn of its most impressive features. "Therefore, let not the hand say to the foot, I have no need of thee."

Let the teacher strive to find out the principles that underlie the occupations and plays of the kindergarten. She will find them the beacon lights by which her bark must be steered.

Let the kindergartner cease to regard her fraternity as having alone attained unto and applied these principles. She may find in many primary schools, that which would have delighted the heart of Froebel himself. * * *.

But did Fröbel claim to be anything but a most untiring seeker after truth? Did he seek for himself the notoriety of having been the sole discoverer of universal law? Was he not a learner among learners? * * *.

In this work there is neither high nor low, for each is but a part of one great whole. The farther we advance, the more are we indebted to those who have wrought before us. We are simply building upon their broad foundation.

We see the first workings of these principles in the nursery life of a well ordered home. The mother watches her child, delights in its opening intelligence; and through the love of her wisdom and the wisdom of her love, she furnishes the occasions for this natural development. Her one concern is, "What is God's thought for this little being? How does he work with it? Only let me find out that, and I will gladly join hands with him all the days of my life."

We see this same divine energy as it were in the kindergarten, where the child has his first contact with the world and society; where he becomes conscious of his wider relations. The primary school marks but another phase in the development of this spirit, and the good work does not stop here. Wherever we may be placed, we hold the same things in our hands. The humblest kindergartner, the most obscure teacher, may feel that her work is just as important to the great whole as the professor's from his learned chair, as the college president's from his responsible position. Should this not make us feel more at one? * * *.

HOW MAY KINDERGARTEN METHODS BE APPLIED IN PRIMARY SCHOOLS?

How may the principles of Fröbel be applied to primary school work? This question naturally divides itself into two leading topics:

First. How shall the child be transferred from the kindergarten to the primary school, without any change of the developing principles there wisely inaugurated?

Second. How shall the primary teacher treat the child who has never enjoyed the perceptive training of the kindergarten?

It is true that some children sustain more or less injury in passing from a genuine kindergarten to some primary schools.

It is a similar experience to that of the young child fresh from an active, sunny home life, upon entering the school. This fact has been deeply felt by the kindergartners, and in many kindergartens there exist what are commonly termed "linking classes" designed to properly and gradually introduce the child into school life. This is a wise provision as things are now. But if the kindergarten and primary school are but two phases of the same spirit, the passage from the one to the other should be made natural and harmonious.

The primary school should continue and apply, under new forms perhaps the principles of the kindergarten, at the same time adding its own peculiar features in due season. And let us state here, that this can never be done without mutual concession. And yet, what a cry of dismay has risen whenever this idea of concession has been touched upon.

Now, we do not mean to say that the kindergarten as formulated by Fröbel and developed by his disciples is to be so essentially changed as to become in any sense a new thing. Neither is the primary school to lose its characteristic features. But some modification must surely be made in both these departments of our school system.

The kindergartners must extend their vision onward toward that chilly little height of scholastic eminence, where the primary school has planted itself like some juvenile academy. But the spirit of the primary teacher must meet the kindergartner more than half way. The teacher must descend from her height to the sunny plains of childhood, and there amid its birds and flowers, its laughter and song, she will find a fellow-worker, and these two forces must heartily unite their interests and sympathies.

In the kindergarten there is the outpouring of a spontaneous life. The senses and perceptions have sway and their activity is constantly excited.

In the primary school the memory, reason, and judgment are supposed to be specially cultivated. There are many primary schools where the training of the perceptions is largely ignored, where the imagination is neglected. Can the child pass from the kindergarten to such a school without positive detriment to his better culture?

Why cannot the kindergartner in her work begin the cultivation of those powers which the primary school is supposed to represent? It will only be taking a short step farther than her prescribed limit. And if there be an arbitrary limit, does it not prevent in spirit at least that vital union which we urge as absolutely essential to the securing of the best results?

We do not recommend the turning of the kindergarten into a semi-primary school. But we do hold that the kindergartner should be thoroughly versed in pedagogic principles and methods, in the special application of foundation principles beyond her own circle, and that she should begin to prepare her charge for coming changes.

Just what this preparation should be in detail will become evident to the kindergartner who has this look ahead. For illustration: The kindergarten is pre-eminently designed for the development of the first powers of the child that unfold under natural and kindly conditions. It is the plowing of the ground, the enrichment of the soil. In its exercises the perceptions are mainly cultivated. The school should continue this work, and in addition apply itself to the powers of memory, reason, judgment. In the kindergarten the child is led to control himself unconsciously, in the school more consciously. It is true that too much of the arbitrary element has entered into our elementary schools, and in the kindergarten possibly hardly enough.

In our schools there should be more of that wise winning, by which a child is led to do the right cheerfully and willingly. Still, even in the kindergarten the little ones should feel the power behind the throne.

RESPECT FOR AUTHORITY DESIRABLE.

We believe that children have an intense respect for law and order however careless they may be themselves. It is right, it is imperative that a child shall feel himself obliged to do certain things, and refrain from doing others, because it is a required or expected thing. And if the kindergartner or teacher be as firm as she is winning, the children will not chafe under her little restrictions.

There should be times in the kindergarten when the children are required to remain quiet for a time, while in some position not irksome. If such little devices are not employed, how else can the child become accustomed to the long sittings in the primary schools?

Do not some kindergartens err from an excess of patience? We have more than once seen the kindergartner stand over a naughty child for half an hour, striving to win him to do a thing; whereas, a wise mother would have settled the matter in about thirty seconds, by insisting upon prompt obedience both as duty and privilege. We believe most heartily in that wise direction of the will that secures a voluntary obedience from the child. Personal issues are to be avoided in the school and kindergarten as well as the home.

Still the child must realize that obedience is not always to be a choice with him; that he owes it to others who have a right to expect that unquestioning, cheerful service. Some of our most loyal kindergartners have maintained that we do violence to the child's nature by insisting. Yet how shall he escape this great burden laid upon him by nature and life?

The human being is hedged about with inexorable laws, in whose supreme tenderness lies their very unswervingness.

And the truest, manliest part is always the prompt and cheerful obedience consciously rendered to those sources to which we as conscious, thinking beings owe allegiance. Children respect infinitely those people who control them firmly as well as tenderly. They secretly scorn those who allow the slighter, more freakish nature to dally with rightful authority.

So we would say to the kindergartner — train the will, teach a reverence for authority. "Liberty under law" should be your motto. We have spoken of a moral issue which, if met, will help solve the question under discussion. There are questions of the intellect that have a place here. The work of the kindergartner is chiefly development; that of the school is to continue this process, and apply and formulate what has been developed.

MEMORY, REASON, JUDGMENT.

"Never ask your children what they remember," say the kindergartners. Why not? Does not the memory in some degree awaken with the perceptive faculties? The child has examined and played with the cube many times. His attention has been called to its distinguishing characteristics of faces, edges, corners. Suppose the kindergartner says to her pupils, "You remember our little friend the cube. You have seen him so many times that you know just how he looks. I wonder if you can tell me anything about him?" Will not the children delight in describing the form, each adding his mite of information concerning faces, edges, corners, right angles, etc.? If the kindergartner has clearly in mind what should be the legitimate result of all this knowledge, she may, by skilful questioning, lead her pupils to that invaluable habit of applying and using that which has come to them through observation and experiment.

We have heard both primary teachers and kindergartners say: "We never ask our pupils for reasons." Again we inquire, why not? Do not the reasoning powers also awaken very early, and do they not demand some recognition even in the kindergarten?

"This is just six inches long," said a little five-year-old one day in the kindergarten, holding up a red stick. "How do you know?" we inquired. Quick as a flash the stick went down on the table against the black lines that ruled it off in squares. "Why, don't you see? Here are six inches on the table, and the stick just fits," was the triumphant reply.

Let the kindergartner go on dealing with sensations and perceptions, but at the same time work toward the memory, reason, and judgment. By working carefully, balancing wisely, she does more than develop the child, she assists in the solution of this most important problem.

THE BUSINESS OF THE TRUE TEACHER

But the primary teacher has her part. In receiving children from the kindergarten she must not ignore their past training. She must continue that development, leading the children gradually into the conditions and workings of her own department. There are kindergartners and primary teachers who work together in this sympathetic union. In many of the free kindergartens this problem of the relations to and union with the public schools has been earnestly considered. Even now the fruits of this well doing are not wanting.

How shall we deal with the child who enters school without previous training? Does he always come to us, every power of mind and heart on the alert, ready to respond to our leading? Does nature alone and unaided give him this opening and unfolding of the faculties, so imperative if one is to be broadly educated?

To one fact all observing teachers will bear witness. It is the blindness, the obtuseness, the passive acquiescence of the majority of children, even many who come from cultivated homes. They have eyes, but they see not; ears have they, but they hear not; they have hands, that either lie idle or engage themselves in destruction. Their curiosity never having been directed, resolves itself into mere mischievousness.

We must take this semi-developed being, and in some sense supply this lack of an earlier, and what would have proved in its time, more valuable training. And we must do this in order that our own teaching may prove effective. The primary school has not always felt itself called upon to supply these lacks. In consequence, results have been partial, unsatisfactory, entailing weaknesses that have been felt in the higher grades.

Our work presupposes a certain development, but that development has not been a fact—yet we go on presenting truths to minds not prepared to receive them, to the blinded eyes that see not. And we are eating out our own hearts because of the failures that are the inevitable lot of these poor little ones. It is a clear case of the making of bricks without straw.

THE KINDERGARTEN A DESIRABLE PORTAL OF THE PRIMARY SCHOOL.

Such experiences have not been in vain. It has dawned upon us that we must begin at the beginning. What progressive teacher will not rejoice when her work shall be preceded by a judicious kindergarten training? But that day is still in the future. One fact, however, is patent: The primary teacher should understand the kindergarten, and, if possible, receive the training. In no other way can she see the relations between the two, and what principles are common to both. To apply Fröbel's principles to her own work, there must be a change in its ostensible aims.

The parents are looking mainly for utilitarian results; the number of books read through, the amount of arithmetic compassed, the products of pen and pencil. In the teacher's mind these things, however admirable and necessary, must not be considered finalities. All this may be done with very little training of the child's faculties.

The true test of a child's training is in other directions. How thoroughly is he alive? Does he use his faculties? Does he delight in investigation? Is he full of resources—an intelligent talker, an agreeable companion? Is he manly, courageous, upright, pure, and refined in thoughts, language, actions? Is he kind to his mates and dumb animals, respectful to his elders, regarding rightful authority? Is he personally tidy, tasteful, polite, and thoughtful?

It is to the formation of character that the primary teacher must address herself, and to correct habits, both moral, mental, and physical. Let us make as good readers, writers, and reckoners as knowledge, skill, and patience will admit, but never let us remain satisfied with what is still only secondary. With this new aim firmly established, it will become evident to the community that the schools and a school system exists simply and solely for the benefit of the children, not the children for the school. It will then be impossible to crowd and cram children for the sake of that grim and relentless idol, yearly promotion. In that day, the developing of a child's mind will seem of more moment than the crowding into and the extracting of facts from the mind.

THE PRINCIPLES OF FRÖBEL APPLICABLE TO ALL PRIMARY SCHOOLS.

When this change of base is established, at least in the teacher's consciousness, there is hope that the principles of Fröbel may be applied to our primary schools. * * * * As long as teachers yield to unjust demands they will suffer them. Let them then take as it were their lives in their hands, and, if needs be, stand alone against the popular clamor. The world grasps at the husks, mistaking show for substance. But the life of man cries out for living bread. See well, that we give no stones. * * *

Let the atmosphere of the school then be homelike, free, affectionate. Never be afraid of showing your children in countless tender ways how much you love them.

The atmosphere must also be a busy one. Develop in your pupils the real love of and a genius for work. Teach them what an untold luxury good hard work is. You may rouse in them a perfect enthusiasm for doing. In short, make your school a live one, let its atmosphere be that of joyful striving. Make every child feel that you reverence his honest thought and effort, but that you have no sympathy with dishonesty of purpose, half-heartedness or laziness. * * *

We have now a teacher fired by the true ideal, and a band of children who love their teacher and work with freedom and enthusiasm, in a school whose atmosphere is cheer and inspiration. Is this sufficient? The teacher must know thoroughly the human mind, its powers, the order of their development, and whatever excites their activity. Then she must resolutely plan and carry out her work on the line of this natural development. She must never forget that her business as well as the kindergartner's is development. She must be too wise to fret and worry over the question of results, knowing that if she attends carefully to the power she is cultivating, the best results will follow. Two aims must be ever before her: 1. To awaken ideas. 2. To lead the child to express these ideas in various ways.

The pupil must have a constant association with objects, and by his own investigation (guided of course by the teacher) he will gain ideas of form, color, size, number. By closer experiment the qualities of objects, such as heat, cold, roughness, polish, sweetness, sourness, and the like will be gained.

In the dealing with the various gifts of the kindergarten, the colored balls represent separate ideas to the child. The sphere, cylinder, and cube suggest the ideas of opposites or contrasts. He is delighted to find in life about him forms based upon these three types. The divided cubes suggest the idea of taking a part to combine again in new forms. Thus the first two series of gifts follow the first aim mentioned, that is, the awakening of ideas. The rest of the gifts and occupations embody the second aim, that is, the original expression of the child's ideas. There is not an exercise in primary school work that may not be made to embody these two aims.

Lead your children then to an acquaintance with objects — in form, color, size, number, and other qualities. In all this work encourage the child to continually express himself.

He may mould the forms he has examined in wax, clay, or snow, developing from them the objects he sees in real life. He may draw them on his slate or paper, adding color to his drawing, if encouraged. He may tell or write stories about them. He may hold them up before the class and lead others to see the same things. Original investigation and full expression on the part of the child are the two main points to be kept in mind by the teacher; they should be aimed at in every exercise of the school.

The child reads a sentence silently; a new and amusing idea is awakened. With flushing cheek and laughing eye he repeats the idea to you. He has investigated and expressed.

He works with his counters, solving some little problem, and perhaps illustrates its solution by his own rude drawings. The same process has been repeated. The two parts are wedded by nature. Let not the teacher put asunder what God hath joined.

In all exercises of the school encourage the child to illustrate by pen, pencil, grouping of objects, in plastic form, or by his own words the ideas that have been awakened.

It is the development and constant exercise of the faculties, expressive, creative, and social, that ends in true culture, and these are the very foundation stones of Fröbel's system. This is the very heart of the kindergarten carried on into a new condition of work. Let us stretch out our hands toward those stranger hands, that after all are but carrying the other end of our burden. We are too near to pass each other by in chill indifference. The cause is too dear to be risked by coldness, suspicion, misapprehension.

DISCUSSION.

A MEMBER. I cannot repress a hearty amen to the last paper. Primary teachers East and West have the same work to do. Children need the kindergarten training. Our school board furnish me with all materials, but require me to do first and second grade work also. I am delighted with the result of the kindergarten work. We must begin at the beginning. When pupils first enter school, we must find what knowledge they have already gained, and proceed from that.

Miss DICKEY, (of Utah.) The kindergarten prepares for the work of the primary school. The teacher must work upon the plane of the child's understanding; enter into sympathy with him. There is too much sentimentality about the kindergarten. Call out a spontaneous activity. The imagination colors the whole life. Through songs, games, and little acts of kindness the imagination is cultivated. We must make the kindergarten practical, teach the child the use of all his faculties, and through stories and in other ways cultivate his imagination rightly. When I see children on the street, and realize how their imagination is being colored for all their after life, I feel that we must work more and talk less.

Mr. BOTHWELL, (of Albany, N. Y.) We have not in our Albany schools the pure kindergarten, but we have found this to be a fact, that, if a child of four years is put into a kindergarten for three months and then put into the primary department, he can do a year's work in that grade in six months. We have the kindergarten work adapted to little children but not to larger or older pupils.

Perhaps some of you have read "The Evolution of Dodd." I want to tell one story from it. Dodd was six years old, and the son of a Methodist minister. He had never attended school but had learned much. His teacher's idea was that every child should go to the kindergarten, and he was accordingly given some sticks and peas, which latter he proceeded to eat.

He was then put into a class where the word method was being developed. The word was girl, and the teacher had the picture girl, the word girl, and the real girl, and the children were asked to point to each of these. After three or four had answered, Dodd was called upon. To the amazement of his teacher, in answer to her request, he replied, "I won't do it." When asked why he refused, he said, "I knowed all that before I came here." We should be careful to find out where to begin, go down to the child, and base our teaching on the knowledge he has previously acquired. The influence of one kindergarten spreads to our primary teachers, and is felt in our schools.

Miss CURTIS, (of Kansas City, Mo.) I liked and want to enforce the expression used by Prof. Hailman, "Going up to the child." Not, "going down," as the last speaker said.

Mr. BOTHWELL. The criticism is accepted.

Miss CURTIS. In regard to Miss Brown's paper, she speaks of kindergarten work stepping up, and primary work stepping down. The primary rooms of to-day are beautiful, bright, and ornamental. If primary teachers would call for kindergarten materials for work, we would receive it. * * *.

The next paper was one of very great interest in its detailed account of the gradual awakening of the intellect of the blind children, by means of an adaptation of the kindergarten methods. I have space for only the opening and closing paragraphs of this most touching and suggestive recital of how by patient loving kindness, the barred doors to the mind can be unlocked; as was shown, years ago, by the good and gifted Dr. Samuel Howe, in the world-famous case of Laura Bridgman, who was gifted with no sense but that of touch.

(*f*) *THE KINDERGARTEN IN THE EDUCATION OF THE BLIND.*

Miss ELEANOR BEEBE, *Institute for the Blind, Louisville, Ky.*

Thinking of the children I have lived with during the greater part of the last six years, I am reminded of Hawthorne's "trumpeter," who summoned by some common bond of brotherhood a various company to walk together in the "Procession of Life."

In this little band, gathered by the common tie of blindness, from mansion, almshouse, and all the grades between, there are of necessity many incongruous elements. * * *

To enable such children to grow harmoniously, to nourish each according to its needs, is a difficult task. But, starting with some experience with sighted children, and proceeding "from the known to the unknown," I "learned to do by doing," heartened by the conviction that some phase of the joyous and versatile life of the kindergarten would arouse these different natures — some turn of this many-faceted jewel would send a ray into each darkened mind.

The blind are popularly supposed to be gifted — as a kind of providential atonement — with wonderful delicacy of touch and hearing, and special talent in music. Were this true it would simplify the work of the teacher very much. The loss of one sense naturally stunts the companion senses and stupefies the whole being, until "second nature," the good foster-mother, by the long and varied use of the remaining senses, perfects them through the need for substitution. The popular view is unjust to the blind, preventing a fair appreciation of the long, long effort necessary on their part to reach the ability they do.

The "kindergarten games" have been of the greatest importance in quickening them into life. Most are immediately attracted, and none fail in time to respond to their vitalizing power.

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Most of these abnormal children will accept memory lessons with fatal ease. Before the kindergarten was introduced into the institution, one such child was taught to recite the bones of the head in rhyme. And that well-meaning teacher did not know that such work was as innutritive, as resultless as chewing gum! Shall we give these starving children the primer and the multiplication table? For bread, shall we give them worse than a stone? — for they might learn to play with that — shall we give them opium? — The weak, helpless bodies must be strengthened by variety of use, the limp fingers made tense with intention, the feeble, wandering minds attracted, the whole nature roused and made happy.

The world is seeing now what the kindergarten can do for its natural children. The time is passing when men will look upon it as did a rich man some years ago, who, when asked to send his children to my kindergarten, exclaimed, "No! I can get my children *herded* all day for half the money!" But the world does not yet know what Fröbel can do for her defective, abnormal children. There is sore need of him in every school for the blind, for the deaf and dumb, for the feeble-minded. Who can equal him in teaching us how the natural, wise, and loving working of the humane upon these little ones, can make them human?

A story tells of some far embassy, dispatched to buy the favor of an Eastern king; and how the gifts they offered proved but dazzling dust shed from the ore beds native to his clime.

"Shall the production of form out of unshaped stuff be art, and to evoke a *soul* from form be nothing?"

APPENDIX K.

MISCELLANEOUS PAPERS,

MOST OF WHICH ARE REFERRED TO IN EARLY CHAPTERS OF THIS VOLUME.

I. Introduction.
II. The "Art for Schools Association," Manchester, England.
  (*a*) The Use of Pictures and other Works of Art in Elementary Schools, by T. C. Horsfall. (1884.)
  (*b*) "Pictures for Schools," Manchester Guardian. (1887.)
  (*c*) "Artistic School Surroundings in France," from article in the American Teacher, by Dr. L. R. Klemm. (1888.)
  (*d*) Industrial Training and Art Surroundings, as exemplified in a famous English School. (1888.)
III. Experiments in Industrial Art Education, by Charles Godfrey Leland, Esq.
  (*a*) "Hand Work in Public Schools," from Century Magazine for October, 1882.
  (*b*) Letter from Mr. Leland concerning his educational experiments. (1883.)
  (*c*) Extracts from address by Mr. Leland delivered in Brighton, England. (January, 1888.)
IV. Extracts from a little book entitled "How to Become a Good Mechanic." (1883.)
V. "Industrial Education and Trade Schools in Switzerland." Extracts from Report made to the United States State Department, by Hon. Boyd Winchester, United States Minister to Switzerland. (1887.)
VI. Industrial Instruction discussed by a Swiss Educator. (1887.)
VII. Extracts from article in New York Tribune on "Technical Education in New York." (1887.)

INTRODUCTION.

The somewhat miscellaneous character of the papers comprised in this Appendix arises from the change in the arrangement of this volume, due to the introduction of the topics connected with the Industrial Education movement in public schools. References to these present papers are scattered through the first two hundred pages of this volume.

The first papers relate to the movements in England and France for the artistic adornment of school-rooms and buildings, referred to on page 9, in connection with the account of the Boston experiment, which preceded the English movement here recorded. These are followed by an account of the famous English School of Uppingham, in which both industrial training and artistic surroundings have been added to the studies and surroundings formerly thought all sufficient in the time-honored classical public schools of England.

The extracts which follow from the Century Magazine article, by Mr. Leland, in which he describes his experiments in Philadelphia, are referred to on page 35; these, in connection with the accompanying letter to the author of this report, and the extracts from the report of his somewhat recent address, on the occasion of the awarding of prizes to the pupils of a local art school in Brighton, England, will be found of interest, especially by those who may be considering the wisdom of introducing any forms of elementary industrial art training in the lower grade schools; as, in these papers, his methods are further explained and set forth.

An interesting phase of the discussion in regard to the essentials of a practical education appears in the extracts given from the little book of suggestions for the self-education of mechanics, by a mechanic.

The excellent account which follows of Technical and Industrial Education in Switzerland, with a description of the Swiss Trade Schools, is taken from a recent report made to Hon. Thomas F. Bayard, United States Secretary of State, by Hon. Boyd Winchester, United States Minister to Switzerland. For reference to these extracts, see page 66.

The abstracts from the recent work, by Herr Seidel, on Industrial Instruction, seem to follow, most naturally, after the official showing of the Swiss system by the United States Minister. The extracts from this interesting work relate, however, to the philosophy underlying this whole movement, and are limited by no narrow bounds of a country or nation.

The final paper, an extract from the article in the New York Tribune on "Technical Education in New York," in which, incidentally, the definite training of European Artisans in the use of American tools, as a preparation for their emigration to the United States, is asserted, is here given in confirmation of the statement previously made in this volume. See references on pages 60 and 88.

The succeeding series of the Appendices which relate to Industrial Training in Public Schools follow in what it is hoped will be recognized as a logical arrangement.

II.

THE "ART FOR SCHOOLS ASSOCIATION," MANCHESTER, ENGLAND.

INTRODUCTION.

In the first chapter of this volume a brief account is given, in connection with that of the earlier movement in Boston, of a movement in France and in England, for the general introduction in schools of pictures, and other works of art; both to adorn the school-rooms and as educational objects, valuable as illustrative of other studies, and for their utility in awakening and directing the minds of the children to a perception of the beauty of natural objects, as well as in cultivating, by their direct and indirect influence, correct taste.

At a session of Section "A" of the International Conference on Education held in London, August 4th, 1884,* a paper on this subject was read, followed by a spirited discussion.

This paper gives a striking picture of the lack of a knowledge of natural rural objects on the part of the children of the poor in English cities, and forcibly illustrates the dwarfing effect on the intellect of such ignorance; since a person ignorant of nature, is deaf to all suggestive references to nature in literature, blind to the representations of natural objects in art; and so, forever shut out from a world of innocent enjoyment.

It may be that the author of the paper somewhat overstates the moral effects and the social inter-relations, which might fairly be expected to follow the general adoption of the means for art culture which he describes; and it will be seen that his first critic is very strongly of this opinion. The latter, however, wholly ignores the educational use proposed by the pictures of natural objects, and, in so far, fails to do justice to the plan.

Nevertheless, there is so much of value in Mr. Horsfall's paper, as well as in the general views advanced by his critic, Mr. Thomas, particularly in what the latter says as to the importance and value of noble art shown in public buildings in contrast with a certain sturdy simplicity in contemporary private dwellings,—which was a striking characteristic of the art cities in the best times of the Republics of Greece and Italy,—that it has seemed advisable to quote from them both at length; while, in the comments of the other speakers, not only are the criticisms by Mr. Thomas themselves freely criticised, but many other topics, bearing direct relation to the subjects treated in this volume, are touched on.

Mr. Horsfall's paper, in its pictures of the ignorance of English town children, in its statements of the material used by the association, and in the account of the results observed, is of great value. His suggestion of the need of training school children to a knowledge and perception of what the citizens owe to the community,— in the way of combined effort to secure the provision of parks in the crowded towns, and of other public desirable facilities for the health, enjoyment, and instruction of the people,—contains a seminal idea, well worthy the thoughtful consideration of American educators.

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* See Volume XIII, Health Exhibition Literature. Pages 54–77.

There has long been evident need for some training to teach the majority of men and women how to carry themselves towards others in public conveyances and places of resort. This could be easily given in the schools, and it would not be easy to overestimate the aggregate addition to comfort and happiness which would result from a general reform in this matter of heedless indifference to the comfort of others so commonly shown; and shown by many who would resent an accusation of selfishness.

It is as easy to see that, if an intelligent interest in matters which relate to public health, happiness, and convenience, should be commonly shown by a majority of citizens; as might well be, if the children were instructed in the schools in regard to such matters, a great improvement in the living surroundings of the dwellers in towns and cities, would be speedily effected.

What has been accomplished in many towns and villages by the "Village Improvement Societies," in New England and elsewhere, is an illustration of the beneficial results of such local action; while the splendid Metropolitan Museum in New York shows how the combined efforts of a few public spirited liberal private citizens may benefit, not only their own local community but a whole country. The great public library of Boston with its cluster of branch libraries distributed in different neighborhoods, is another example of the benefit a populous community may derive from the far-seeing efforts of a few citizens influencing the civic authorities. To these striking instances many illustrations could be added of similar good results of combined action.

In another form of government where the laws are imposed on the people, due obedience to law may be all the instruction required. In a Republic, where the people are the law-makers, and where the law rests upon public opinion for its efficacy, it would seem to be an imperative necessity that the education of every citizen should be such as will not only enable, but will impel him to take intelligent action in all matters which affect the health, education, and comfort of the community.

The manners, morals, and civic virtue of the future citizen, are then as legitimate subjects of the child's training in school as that intellectual knowledge of "words," to which the training of the school was formerly limited; or as is that familiarity with "things," which the school reformers of to-day so ardently urge. Whatever, within the scope of childish capacity, will serve to make better citizens, that clearly falls within the proper province of the public schools, frequented by the children of the people.

That the child's attention can be directed to the perception of beauty and harmony, and that the development of the higher intellectual and spiritual powers of the child can be begun in early childhood, has been abundantly demonstrated by kindergarten experience.

That natural objects, and the artistic representation of natural objects, *can* be made use of to awaken the child's curiosity, and to train the child's perceptions, is undeniable; that pictures and other objects might remain in a school room with little more of educational power than the plastered walls is doubtless as true. The value, the influence, of the school in all its powers depends almost wholly upon the teacher. If the teacher's eyes have not been opened to the beauty of nature, how can the child's perception be awakened? It will be the blind led by the blind.

The various suggestions, with which this paper, and the discussion concerning it, abound: as to possible ill effects of inartistic pictures; as to the desirability, in an educational point of view, of frequent changes of pictures and objects; as to the possibility of developing in all the children the capacity to discriminate colors, just as it has been shown that general training in music develops in all the power of discriminating sounds; as to the broadening influence, looked at merely in its use as enabling the pupil to understand allusions, to natural objects or to art, in literature; and, as to the various uses in illustrating the ordinary studies, and in instructing children who had no other opportunity of obtaining any knowledge of the objects of animate, or inanimate nature, depicted; will be found full of interest and value.

The use of such objects in developing the imagination, and in awakening the child to a perception of higher things than the mere animal needs of man, is fully set forth in the paper read by Mr. Horsfall.

(*a*) "*THE USE OF PICTURES AND OTHER WORKS OF ART IN ELEMENTARY SCHOOLS.*"

By T. C. Horsfall.

In this paper I shall first mention some of the advantages which I believe school children and the rest of the community would obtain by the right use in elementary schools of pictures and other works of art; then I shall give some of my reasons for believing that those advantages would be gained; and next, I shall indicate the kinds of works of art which I believe to be suitable for use in schools, and explain what, in my opinion, constitutes the right use of works of art in a school.

I believe that the right use of works of art in elementary schools will effect an improvement in the taste of English workpeople and employers, which all persons conversant with English manufactures know to be very desirable;

That it will reveal to many children who live in the crowded parts of large towns some of the highest qualities of their own nature and that of their fellow-creatures, of the existence of which most such children, and many also of those who live in pleasanter places, are not aware;

That it will soon make the homes of many workpeople more attractive than workpeople's homes generally are now, and will do much towards creating a fuller and happier family life amongst the workpeople of towns, by opening to them many pleasant occupations and amusements which parents and children can enjoy together, and which will therefore create between parents and children the bonds of common interests and pleasures:

That it will make schools more attractive for children, and add to the brighter side of the culture of teachers, and, while making their work pleasanter, increase their influence over their pupils.

Improvement of Taste.—Two conditions are needed for the development of good taste in a person who has the qualities needed for its acquisition. One of these conditions is, that from childhood onwards he shall habitually see beautiful things; and the second condition is, that in childhood and youth people whose opinions he respects shall make him notice the difference between beautiful and ugly things, and make him feel that they regard beauty as a thing of great value.

It is impossible to insist too strongly on the dependence of good taste on the existence of these two conditions. The co-existence of both is quite necessary. The second cannot, of course, exist unless the first does also; but the first exists for many persons without the second, and then exists for most of them in vain, so far, at least, as development of taste is concerned. All children in the country habitually see beautiful natural forms and colours, but this does not suffice to make most of them even perceive the difference between good and bad form and colour. * * *

ANALOGY DRAWN FROM RESULTS OF MUSICAL TRAINING.

For there is no reason to doubt that the power exists in almost every one. The relation existing between our brains, or the whole of our nervous system, and colours and forms, which makes some color and combinations of colours, and some combinations of lines and curves pleasant to most of those persons who habitually give much attention to the effects caused by forms and colours—this relation must be of the same kind as those fixed relations between sounds and our nervous systems which make certain sounds and combinations of sounds pleasant, and others unpleasant, to all persons who have had good musical training. Because a great many grown-up persons find it impossible to learn to sing correctly, and others cannot even perceive any pleasantness in music, it used to be supposed that a considerable part of the race are born without the power to gain love of music and skill in it. Now it is known that it is a question of early training, and that there are not half-a-dozen children in every thousand who cannot gain the power of singing correctly and of enjoying music if they are well taught in childhood, while their nervous systems can easily form habits, and have not yet formed the habit of not noticing differences of sound. There is, then, good reason for believing that the power of discriminating between good and bad colour and form can also be given to almost every one by proper teaching in childhood. On the other hand, it is nearly certain that few of those who, when childhood is over, still lack a keen sense of the difference between good and bad colour and form, will be enabled to gain it to any marked degree by subsequent training in schools of art, the chief function of which is not to create a sense of beauty, but only to develop it and teach it the best modes of expression.

WHY BEAUTIFUL OBJECTS ARE NEEDED IN SCHOOLS.

It is only in schools that we can hope that most children can be enabled at present to habitually see beautiful things and feel the influence of persons respected by them, who, perceiving the difference between beautiful and ugly things, can lead the children to feel that beauty is a thing of great importance.

Pictures are amongst the beautiful things needed for this purpose in schools — I will say later what kinds I believe to be most suitable — but I feel sure that other things are needed also, and that examples of beautiful textile fabrics and beautiful simple forms of pottery and glass, can be made means even more efficient than pictures for teaching children to think about and feel the difference between good and bad form and colour.

Useful as collections of works of art in schools would be if they only developed good taste in a considerable number of children, the development of good taste is a result of but small value in comparison with those other advantages which I said the use of good works of art will probably give. In order that I may show that they are needed for the gaining of those other advantages, I must trouble you with some evidence to prove that at present a great many English children cannot know much about some of the highest qualities of human nature, cannot know that such a thing as full, wholesome life exists, and cannot leave many of the occupations for leisure time which are needed to create strong bonds of loving companionship between parents and children, husbands and wives, brothers and sisters.

ENGLISH CITY CHILDREN IGNORANT OF FLOWERS, AND BEES, AND BIRDS.

Some time ago Mr. H. E. Oakeley, Her Majesty's Senior Inspector of Schools for the Northern District, after reading a paper issued by the Committee of the Manchester Art Museum, wrote to me: "It is perfectly true, as you state in your paper, that a very large number of children in Manchester and Salford are living in places where they never, or very rarely, see anything which is beautiful. I have often found in places like Ancoats and Bradford"— parts of Manchester —"that children scarcely know what a flower is, and have seldom if ever seen a primrose or violet." Then Mr. Oakeley went on to tell me that in one school in Ancoats he found a whole class of children who had never seen a bee, and had no idea what it was like or where it might be found.

In a later letter, Mr. Oakeley says:

"I had an experience at a school to-day which caps the bee story. In some lines learnt by boys in the 6th Standard there was something about a skylark. I told the boys who had ever seen a lark to hold up their hands, and four out of about twenty did so. I said to one of them, 'Where did you see a lark?' He replied, 'In a cage at the public-house at the corner of the street.' Poor lark, and poor lads!"

During last summer a woman who lives in Manchester, whom I had been telling about squirrels which come into my garden, asked me, "And what kind of birds might them be?" And a few weeks later a Manchester girl, who was passing under a mountain-ash tree, the red berries of which hung close to her face, asked if those were roses. The Rev. Mr. Lund told me that a Manchester Sunday school teacher and one of the scholars who had caught a dragon-fly, thought — the one that it was a kind of bird, the other that it was a serpent. A lady who worked at Mildmay, in London, told me she found that many of the children she taught did not know what a lamb was like. * * *

It is of course impossible to know how many of the inhabitants of large towns have ignorance of this kind, but it is quite certain that it is very common. Some of the persons to whom I have spoken on this subject have told me that the ignorance is not as complete as it seems to be, and that, for example, the children who did not know what a bee was like knew bees by sight though not by name. I do not think that this is so, but even if the ignorance of many town people respecting the common objects found in the country were confined to inability to connect names and things, even that degree of ignorance would be, as I shall show later, a very great evil.

I need not argue here that Wordsworth's well-known words: "We live by admiration, hope and love," are literally true, if by "live" we mean the higher part of life; nor need I prove that it is by admiration and love that we gain our highest and most sustaining hopes. But though no thoughtful person needs proof of the truth of these general statements, and though probably every such person remembers to the end of life the keen pleasure he received in childhood from daisies and buttercups, from birds and butterflies, I fear few even of the most observant people realize how much the degree and nature of love and hope depend on early familiarity with beautiful things.

EARLY PERCEPTION BY CHILDREN OF BEAUTY.

We see in our children that in those earliest years of life, of which in later life we remember nothing, beautiful things give delight, that a child a year old already enjoys the bright beauty of flowers and leaves. And it is impossible to doubt that this early delight in beautiful things is one of the principal agents in developing the power to love both things and persons, and that it co-operates with our love of persons to make us know that there is such a thing as wholesome life, well worth living, and to make us know always, as we grow up, that what most makes life worth living is the activity of our highest powers of admiring and loving. What can give the knowledge that there is such a thing as full wholesome life to children whose early years—those in which they are forming habits of thought and feeling, which may afterwards be modified, but never quite got rid of—are passed in places where nothing more beautiful than the ordinary contents of an English back street is to be seen? No human life is likely to escape moral shipwreck which is not directed from the first by desire for rightness, and what can give desire for rightness to children whose powers of admiration are never exercised by admirable things? It may be replied that love of people is in the childhood of all of us a stronger agent in developing the higher powers of feeling and thought than admiration of things can be, and that the children of town workpeople, among whom a generous mutual helpfulness and charity are common, have their powers of admiration, hope and love, developed by love, from and for, parents, brothers and sisters and friends.

ETHICAL VALUE OF A PERCEPTION OF BEAUTY.

But for the training of the higher powers thus given to the children of the people of our towns England would be in poor case, but it is at best an imperfect, inadequate training. Those limits to the action of imagination which in theology reveal themselves in anthropomorphism force us to create conceptions of our fellow-creatures in our own image. It cannot occur to the child who knows of nothing more admirable than mud pies, marbles, and things which are good to eat, that his fellow-creatures have higher pleasures, and his love of them must lack reverence, and his conception of the best life open to him must be too low for the power of gaining it to seem worth the cost of much effort and self-denial. Stir his nature with admiration of beautiful things, and you give him not merely a new pleasure, but also new fellow-creatures, able like himself to admire. Enable him to enjoy a picture which he could not make, and he feels vaguely that among his fellow-creatures are people of higher powers than his own, and his conception of life rises to a higher level. It is no exaggeration to say that to enable a child to feel joy in the beauty of nature and art who has never felt it before, is in Coleridge's words to give him "a new earth and a new heaven." And till this is done, the conception of human life framed by the "average" child of even loving parents in a crowded town must be low.

IMPORTANCE OF CULTIVATING RESOURCES FOR INNOCENT SOCIAL PLEASURES.

It is certain that those who are ignorant of beautiful things cannot enjoy the best kinds of recreation. and are thus deprived not merely of pursuits desirable because they facilitate resistance to the temptations of drinking and gambling, but are also deprived of some of the influences best fitted to strengthen family love. Sorrows endured together, of which town people get their full share, are doubtless the most potent agents in giving strength to love between members of a family, but those agents cannot alone complete the task. Countless memories of innocent pleasures enjoyed together, the habit of expecting companionship from each other in the pleasures looked forward to, a store of pleasant knowledge held in common, and the habit of discussing with each other the thoughts and feelings rising from it, these things are also necessary to create ties of love between members of a family.

Which of the best kinds of recreation that can weave these bonds of family love, and at the same time lessen the temptations of sensual indulgence, are available for persons who have hardly any knowledge of the commonest objects of nature? Music and physical exercise are almost the only ones, and pleasant physical exercise is not at present obtainable by the greater part of the people of large towns, and opportunities of hearing good music are still rare, though happily becoming more numerous every year. Conversation, except of the poorest kind, is impossible without such knowledge. Picture galleries and art museums cannot be attractive to those who do not know the elementary forms which art combines. Visits to the country, though pleasant, can have but a comparatively small degree of pleasantness for those to whom country things are almost unknown and unendeared by early associations.

HOW ENJOYMENT OF LITERATURE DEPENDS ON KNOWLEDGE OF NATURAL OBJECTS.

We are apt to believe that our elementary schools and free libraries are opening the best kinds of recreation to our working-classes, and that a few years hence almost every one will gain much pleasure from the best literature. Those persons will not share this pleasant belief who will try the experiment of placing the poetry and prose they care most for in the relation to their brains and hearts which it must have to the brains and hearts of those who know nothing about the country and its reflection in art. Imagine each picture blotted out which is brought before the "inward eye" by each word that is for us the name of some well-known thing; imagine all the vague feelings suppressed which rise in us at the mention of each familiar thing that for us has innumerable pleasant associations; and the finest poetry, the best talk seems to be little more than "as is a landscape to a blind man's eye." The reading of empty names must be dull and unattractive. It is, I am convinced, impossible to think about the subject without seeing that familiarity with beautiful things is one of the conditions needed to enable literature to add much to the welfare of the community.

We cannot hope that the majority of town children will have as much familiarity with nature as is desirable until, the air of our towns having been made purer, every new block of houses near a town has its plot of garden ground; until open spaces are cleared within easy reach of all old blocks of houses; till plants are more generally grown in town dwellings; and till winter gardens, botanical gardens, and art galleries are much more numerous than they now are. But changes so great cannot be effected unless the greater part of the population desires them, and those of us who have tried to obtain open spaces and art galleries for the people know that at present the greater part of the population is not even aware that these things are desirable. At present, therefore, we can only hope to obtain the measures needed to so train the children of to-day that they shall know the value of beauty, and when they grow up seek to bring it into towns for themselves and their children.

KINDERGARTENS RECOMMENDED.

The means which can now be most effectively used for making knowledge and love of beauty common are, I think, the substitution of the Kinder Garten system of training for the old system in all infant schools, and the careful direction of the new system to the purpose of making children know and admire as many natural forms as possible, and of training their hearts and minds to desire to see such forms often; the teaching of drawing from objects in all schools; and the providing of every elementary school and every Sunday-school with a collection of good works of art. As the Committee of the Manchester Art Museum have lately been taking the course which seems to me to be that needed for gaining all the advantages obtainable by the use of pictures in schools, I will describe their system. First, I must speak of the system of their central collection, that of the Art Museum, to which as many references as possible are made in labels attached to the pictures lent to schools.

THE MANCHESTER MUSEUM OF ART OBJECTS FOR SCHOOLS DESCRIBED.

The Art Museum, which was opened last month by Mr. Mundella, contains as many pictures as we can find room for of beautiful scenery and interesting places in the neighborhood of Manchester. Some of these pictures are in oil colours, some are water-colour of drawings, etchings, engravings, photographs. In order to show workpeople that they can easily get pictures for their own homes which will pleasantly keep alive recollections of places and things which have given them pleasure, we state the price of the cheaper kinds of art shown in every part of the Museum.

There is a collection of pictures of common wild and garden flowers; one of pictures of common kinds of trees; one of pictures of common wild birds; one of pictures of other animals; one of pictures of well-known places in different parts of the world; one of beautiful landscapes; one of seascapes; one of war scenes; one of religious subjects; one of portraits; one of copies of works by Turner, chiefly illustrating English scenery. In some of these groups of pictures, representations of the same subject by different kinds of art — etchings, engravings, water-colour drawings — are placed side by side, in order to facilitate careful comparison of the effects obtained by different processes. Many of the pictures — the plates of the Liber Studiorum, and those of the Harbours of England, for instance — have full descriptions and criticisms hung by them. Each of the other pictures has, or will have, a label containing a short explanation of the subject, and a statement as to whether it is an engraving or etching, or whatever it may be. One set of pictures illustrates the development of architecture and sculpture, one that of Italian painting. In cases, there are sets of the tools, &c., used in the various art-reproducing processes: — plates etched and prepared for etching, engraved plates with impressions from the plates, wood blocks for wood engraving, the stones used for lithography, the blocks used for colour-printing; and a brief explanation of each of the processes. Short lectures on the processes and on many other subjects will be given. A band of explainers is being formed. There are also cases of examples of well-shaped, pleasantly-coloured pottery and glass, metal work, and textile fabrics, many of them of the commonest kinds, fitted for common use. There is, too, a model small house, fitted up with well-shaped, well-made things by Mr. W. Morris and Mr. W. A. S. Benson, and there are some casts of Greek sculpture, shown to advantage by having richly-coloured stuffs hung behind and on each side of them.

I have been obliged to speak rather fully of this central collection as it is virtually part of each of the collections lent to schools in Manchester, but I have had to leave many important features unmentioned. A description of the scheme of the Museum has been printed, and the Committee will gladly send a copy of it to any one who desires to have one. The system of the Museum includes the lending of small collections of works of art to all the elementary schools in Manchester and Salford.

OBJECTS COMPRISED IN THE LENDING COLLECTIONS.

It is intended that each of the collections lent to schools shall eventually contain a few examples of beautiful textile fabrics, beautiful common pottery and glass, and casts from sculpture, but at present they consist of pictures only. We lend pictures of beautiful scenery and interesting buildings near Manchester, — these pictures are chiefly photographs, — chromo-lithographs and engravings of other beautiful landscapes and sea scenes, pictures of scenes in the Holy Land and Egypt, of historical scenes of beautiful wild and garden flowers, of trees, of common birds and butterflies, of fairy tales — good examples, in short, of almost every kind of picture. Many of the pictures are, all are to be, provided with labels which tell what the subject is, and of what process the picture is a product; if it is cheap, what its price is, and that of its frame. The labels also make as many references as possible to the Art Museum, to books, to our local Botanical Gardens, and other pleasant places open to workpeople. Thus one of the labels to a picture of a swallow gives a little information about the habits of the bird; another tells that the picture is a lithograph coloured by hand, that an explanation of lithography and the things used in it can be seen in the Art Museum, that pleasant information about, and good pictures of, birds are found in White's 'Selborne,' a copy of which can be bought for sixpence, and in John's 'English Birds in their Haunts,' which cost 6*s.* 3*d.* The label to a frame containing pictures of garden flowers tells that the pictures are chromo-lithographs, speaks of the imperfections of this process of representation, and recommends that the pictures be compared with water-colour drawings of the same flowers in the Art Museum. It tells also that some of the flowers will grow in houses in Manchester, and that they are to be seen in the Botanical Gardens, and in some of the public parks. The label to a set of photographs of Greek sculpture tells that casts of the sculpture are in the Art Museum, and praises their beauty.

Each school can have its collection replaced by another one in three months.

There is a collection of our pictures for schools and in the Health Exhibition, but it was hurriedly formed, and does not contain examples of pictures of English scenery, or of other important classes of our pictures. Nor are all the pictures in it yet provided with labels, the preparation of which takes much time.

HOW THESE MAY BEGIN TO INSTRUCT THE CHILDREN.

After what I have already said, I hardly need add that we do not expect that pictures of beautiful places and things can at first have much meaning for those children who know nothing, or almost nothing, about the things represented. The child for whom real buttercups and daisies, the flight of swallows and the song of larks have no happy associations, who has never felt gladness in fields or on hills, will see very little in pictures of flowers and birds, fields and hills. But still pictures of these things will be of great value even for such children. Some natural beauty is within reach of almost every child, most children have some of it sometimes before their eyes. Ignorance of it is so common partly because their eyes have not gained from heart and mind the power to see these things, partly because "what the eye never sees the heart never longs for," and opportunities of seeing natural beauty at a little distance from home, and of bringing it into homes, are not used or sought for.

The words, now so often quoted, which Mr. Browning puts into the mouth of Fra Lippo Lippi are, I believe, perfectly true:

> We're made so that we love
> First when we see them painted, things we have passed
> Perhaps a hundred times, nor cared to see;
> And so they are better, painted—better to us,
> Which is the same thing. Art was given for that—
> God uses us to help each other so,
> Lending our minds out.

If a child is led in school, as he easily may be by a few words spoken by his teacher, to notice the form and colour of a flower in a picture, or the forms and colours in a picture of landscape, and to find a little pleasantness in them, he will be sure to notice with pleasure the next flower or place of the kind he meets with, and pleasure in the thing will make him care more for the picture, and will give meaning to the name when he next reads it in a book, and thus will begin for him that interaction of art, literature, and nature, to which each of the three owes most of its power to give us ennobling pleasure.

HOW THESE ART WORKS MUST NEEDS INFLUENCE AND INSTRUCT THE TEACHERS.

One of the good results that will be obtained from the use of works of art in schools will be due to the fact that unless they are explained by teachers they will be comparatively useless. Now that the Art for Schools Association * has made it possible to obtain good pictures at low prices, every good school will soon be provided with a collection, and teachers will be expected to make use of them.

This will involve the acquisition by many teachers of some knowledge of art processes, and some love of beautiful colour and form. Every intelligent manager of a school will agree with me in believing that the acquisition of this knowledge and love will be a very great gain. The acquisition of them by teachers for communication to children, far from adding to the burden on teachers and taught, will greatly lessen it, and the results will, I am convinced, do much towards proving the superiority of education of powers of feeling and thought to mere instruction.

RESULTS ATTAINED.

I must say a few words respecting the success which has already been obtained by the use of pictures in schools. We have as yet lent pictures only to twenty schools, and the Art Museum has only been open a few weeks. We have not, therefore, had time to ascertain if a considerable number of children will be led by our school pictures to study the collection in the Museum. But we know that in other ways the pictures lent have been very useful. I will give some evidence, which has come to me without my seeking it. Mr. Godolphin Rooper, H. M. Inspector of Schools at Bradford, visited on a Saturday some of the schools in Manchester to which we have lent pictures. He told me that he found some children playing in the street near one of the schools, and talked to them about the pictures. They told him that they liked having them, and that some of the children brought their dinners to school in order to see them. I asked a boy who, a few weeks ago, was sent to guide me from one Board school to another, if he and his schoolfellows liked our

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* The Hon. Secretary is Miss Mary Christie, Kingston House, Kew; and the office of the Association, where its pictures can be seen, is at 29 Queen Square, Bloomsbury, London, England.

pictures. He said, "Some of us come half an hour earlier to see them, especially when there are any fresh ones." Mr. Mellor, the master of the Manchester Free Elementary School, told me that our pictures not only brighten the schoolrooms, and make them pleasanter for teachers and children, but also enable him to give the children, in a way which is pleasant for both sides, clear ideas about many things,—ideas which, thus given, he says, are never forgotten. He pointed to one chromo-lithograph, which has taught many children the meaning of "plain" and of "river" and "group;" and to another which has given clear ideas of "a glade," "tree-trunks," "foliage," &c.

I have spoken almost exclusively of pictures of beautiful objects of nature. I have done so, because in a short paper I could not speak of many classes of pictures, and the advantages obtainable from the intelligent use in schools of pictures of this class are less obvious, and, in my opinion, more important than even the great advantages which will be obtained from using in schools good pictures of historical, religious, and other subjects.

CHILDREN SHOULD BE TAUGHT AS TO THEIR RELATIONS TO THE COMMUNITY.

There are two points on which, in concluding my paper, I wish to say a few words. It is of so much importance that all children shall receive the training of heart and brain, which can be gained only through knowledge of nature and good art, that children ought to be taught in school that it is a duty which they owe to their neighbours as well as to themselves, to go into the country as often as they can, and to go also to botanical gardens, picture galleries and museums.

All children ought also to be taught in schools that it is the duty of every community to provide itself with public gardens and art galleries. Many persons think it dangerous to teach children their pleasant duties, and to teach them that others have duties towards them, but until we teach children their pleasant duties we shall get little attention from them to what we tell them of their onerous duties; and only by teaching the individual citizen what are the duties of the community to him shall we be able to make him learn what are the duties which he and his fellow-citizens owe to others.

SUGGESTIONS AS TO USE OF PICTURES ON SUNDAY.

The second point I wish to refer to is this. We cannot hope that many children and young people will form the habit of spending part of their leisure time in acquiring familiarity with beautiful things; we cannot expect that many members of workpeople's families will form the habit of enjoying those innocent pleasures together, which are needed to strengthen family bonds, so long as the community prevents the doing of these things by closing the only places where it is possible for most people to do them on the only day on which they can be done.

I can not use here the arguments which seem to me to prove that public gardens and art galleries ought to be open on Sundays, but at least I must say that it is of such immense importance that children shall gain familiarity with beautiful things, and that parents and children of the working-classes in towns shall be enabled to have pleasures in common, that, if gardens and art galleries are not to be opened on Sundays, we ought to lose no time in transferring their contents to those places which are open on Sundays,—to Sunday-schools, churches, and chapels.

DISCUSSION.

Mr. CAVE THOMAS said: I regret to have to take an opposite view to that of Mr. Horsfall; not, be it recollected, against the teaching of drawing, within well-defined limits, for from 1851 till the present time, I have advocated this as the proper gymnastic for the sense of sight—as one of the most important items in general education. But I am totally opposed to the introduction of pictorial art into schools, for at the school-age one is liable to be biased by some special form of art before the judgment is matured. Modern notions about education in taste and art would appear, for the most part, to be founded on the fallacy that the beautiful is the sole aim of nature and of art. Upon this point the late Sir John Herschel once wrote to me: "The Creator had other objects in view in creation than that of the beautiful," or in words to that effect. And upon slight reflection we may perceive that without the contrast of the ugly, the beautiful—as the beautiful—could have had no recognition. This proposal to introduce pictorial art into the decoration of schools, hospitals, &c., appears to me to be an invertebrate notion, and would, with similar well-intentioned but mistaken movements, tend to raise a gelatinous humanity equally destitute of backbone. The beautiful, as Sir John Herschel correctly observed, is not the whole and sole purpose of creation. Our modern æsthetes appear to possess a vanity equal to that attributed to Kneller, who, on it being suggested by a noble lord, his sitter, that it was a pity he was not present at the Creation, replied that he thought it was, as he could have suggested some improvements. Stars do not cover the heavens—the world is not entirely made of diamonds and rubies. Flowers do not envelope the landscape, nor spring from every tree, and flowers themselves differ in degree of beauty as one star differs from another. Neither is animate nature one continuous exponent of the beautiful. The beautiful should be regarded as the bright oasis in nature, to be looked forward to, to be admired, and to be enjoyed as we go laden forward in the serious business of life.

DANGER OF MAKING ART COMMONPLACE—A VERY DIFFERENT THING FROM "COMMON."

Or, to speak of it in a more familiar sense, the beautiful, in the form of art, should be reserved for contemplation on high days and holidays. We have to consider the constitution of the human nature, and that familiarity breeds contempt. Beauty, notwithstanding the dictum of the poet, is not a joy forever. Let the most beautiful object be placed in our common room, and we shall after awhile take no note of it. Music is charming; nevertheless, we do not desire to perpetually hear it. The drama is entertaining and instructive, but we do not wish to be always at the theatre. Art is delightful to contemplate, but we would not have it ever present to our eyes. It would seem to be entirely forgotten that there should be a time and a place for art as for other entertainments. Public buildings, museums, exhibitions, are the proper places, and when the eye can be permitted to make holiday the proper time.

THE IMPORTANCE OF PUBLIC ART.

Public art is vastly more important than private collections, though the wealthy may indulge in these. It is the character of public and contemporary art that gives tone to taste. For my own part, I would insist upon a Spartan simplicity and proportion in the homes and schools of the masses of a robust people. I have no sympathy with the proposal to bedizen cottages, hospitals and schools with art; it is the offspring of a morbid æstheticism, and a proposal which, if carried out, would, instead of promoting, demoralize the taste of the people. The power of discriminating between beauty and ugliness is intuitive. The classes about whom our would-be art reformers are so solicitous have, as the classes above them, that faculty of discriminating the beautiful implanted in their very nature, but they have this advantage, that they are free from those affectations of taste which are the engrafting of fashion. It would in my opinion be far better to leave all scholars, students and working-men to form their own taste. If a sense of beauty were not a part and parcel of our intellectual constitution, we should never have had to talk about the beautiful. It is not in the power of human beings to create this sense, it is implanted and progresses *pari passu* with the development of the human nature, as the power of presenting the beautiful by art does. The most perfect art is not the root and stem of civilization, but its crowning grace, its flower—the effect, not the cause.

THE EXALTATION OF BEAUTY IS NOT THE SOLE MISSION OF ART.

The appreciation of the beautiful, as Christianity has fully recognized, is not the difficulty. That is easy enough. It is beauty and pleasure that the world runs after overmuch. But who shall learn to care for ugliness, and to know that this must also necessarily exist. The aim of Christian art, therefore, has rarely—very rarely—been the presentment of the beautiful. It was seldom the aim of Raphael, and never that of either Michael Angelo, Rubens, or Rembrandt. Art in the Christian ages has had to occupy itself with the delineation of human nature, as it is, ugly, deformed, and maimed, rather than with the ideal. The object of modern art is not solely the presentment of the beautiful. It gives form and colour to every variety of character and of incident. Modern art is, *par excellence*, the illustrator. Our modern critics have got into a muddle, and have confounded the Christian art motive with the Grecian. The beauty of childhood, of youth and of manhood, and not only of these but of animals, &c., are ever before the eyes of all classes. Of what use, then, would it be for the Department of Science and Art to issue a few photographic beauty patterns for the amelioration of the taste of the masses? Nature's museum is ever open to the people,

A PROFOUND TRUTH SUGGESTED.

What art reformers should do, and what they therefore persistently refuse to do, would be to make art public by having the national edifices decorated with great subjects, in painting and sculpture. This is the only true way to move the people through the eye to great thoughts and acts—to thoroughly enlist art in human progress. The pursuit of the beautiful is the pursuit of the pleasing, and the pursuit of pleasure as a sole aim, either in art or in life, does not tend to elevate but to demoralize. The progressive development of Grecian and of Italian art was not, as any one may learn from even a cursory glance at their monumental remains, brought about by the contemplation of perfect art, but step by step through imperfection to perfection. The best art came last, both in the Grecian and in the Italian epochs. We may perceive, then, that this art progress was not brought about by the contemplation of the most beautiful handiwork in art, but by the progressive development of the human nature.

I would say, then, let us above all things be solicitous about the general education of the people, and let us talk less about art. If the general education of the people be proceeding on right lines we may be quite confident that the fine arts will, in the progress of time, by the process of the suns, come to be rightly cared for and rightly appreciated. If any apology be needed for these somewhat rough words, it should be recollected that Diogenes was the necessary antagonist of the luxurious living and the tall talk of a Plato.

Mons. **East**, Rector of the Academy at Périgueux, said he was quite of Mr. Horsfall's opinion on the question. In all schools beautiful pictures were a most important aid to education. There were inside pictures and outside pictures. There was an old monastery at Brantôme, in the South of France, which had been changed from a monastery to a school. The building was so situated that looking out on one side they looked over the valley and the river, and on the other hand they saw the mountains. That was a grand outside picture. * * *

Mr. **White**. I regret very exceedingly the tone and intention of Mr. Thomas' observations except that they give one an opportunity of saying a word or two on the other side. I am afraid that he must have grown up under very morbid influences, and I do protest that at this day we ought not all to aim at being Spartans or Stoics.

PLATO VERSUS MR. THOMAS.

Plato had a very different notion of things. He said, "Present your pupils with everything that is beautiful." If he were not a successful teacher I do not know who could be; but I think that Mr. Thomas has taken the wrong ground entirely from the beginning to the end. He says that art ought to be the crowning of the edifice, and I should like not unnaturally to know how we are to arrive at the crowning stone unless the foundation be well laid; and there is no foundation in art which can be well laid except by the constant contact of the influence of art from the very earliest years. It is perfectly true that we have an intuitive perception of art, of beauty, of music, and, I will even say, of knowledge and intelligence, and the same argument that would apply to keeping our children from that influence in school would equally apply to the step-by-step influence which the presence of everything good and beautiful has. It is not a mere question, either, of pictures and ornamentation in the rooms from which children would be able just to cull the rest without the technical and early teaching which is necessary to enable them to appreciate it to its fullest extent, although they may have a certain amount of intuitive knowledge of it. A child has an intuitive power of speech, but he has not the power of speech at all without the constant contact and influence from those with whom he associates from his earliest infancy; and I say that argument applies equally to art. It may be said, "But you forget that I have put a safeguard to that by saying that art should be taught by drawing. We will have drawing instruction, not drawings." I say that is not art. Education in art is derived from the constant contact with the beautiful.

VALUE OF PICTURES IN HOSPITALS.

Dr. **Mouat** said that Mr. Thomas would banish pictures, he understood, from sick rooms and hospitals. Very well, but he was afraid Mr. Thomas never could have been sick in a ward in a hospital, to experience the depressive effects of bare, blank whitewashed walls. He would not confine himself to that. He would tell a little anecdote on the subject to show how wrong such a view was. On his way home from India during the Franco-German war, he visited the city of Amiens during the armistice. There he found a large number of wounded men in the museum, which was also the art gallery of the city. The German soldiers told him it was without exception the most delightful sick room they were ever in, with such beautiful objects always before them. This incident alone disposed of the argument for banishing art and pictures from the walls of sick rooms.

Mr. **Fitch** said the true test of what Mr. Thomas had urged was to be found in personal experience. Were they not better for having been taught to admire what was beautiful? Did it not add variety and wealth to their own life to find that they understood pictures better than they did before? If it was true for them it it must be true for the children coming in their schools. If they were able to carry out the projects so admirably devised by the Art for Schools Association, they might keep out of view maps, diagrams, pictures of the internal conformation of the body, and objects of that kind, until they were wanted. He believed that all this was not the true kind of decoration. He doubted very much whether the objects that were necessary for teaching ought to be constantly before the eyes of the scholars, and whether with regard to that it might not be true that familiarity breeds contempt.

THE ART OBJECTS SHOULD BE EXPLAINED BY THE TEACHER.

Bunyan's "Pilgrim's Progress" might well remind them that it was of no use to go into the House Beautiful unless they had an interpreter. The advantage of having pictures for young children depended upon having somebody to guide them and point out to them the beauty or the meaning of them. They in London had great opportunities which he was afraid they did not all appreciate. They had in the National Gallery one of the most beautiful collections of pictures in the world. How many teachers in London organized little parties of their scholars and took them round and explained them? Until they used such opportunities they had much to learn as to the best means of cultivating the love of art and beauty among the children of our schools.

Miss **Bailey** (of the Doreck College) said that she was much struck by what had been said by the two preceding speakers. Without wishing to be one of those people who could agree with everybody, she thought they were both right. The first, however, had put the cause of art so strongly that it could not but provoke the rebound which followed. She agreed with the first speaker as to the general value of pictures, but she really came to hear what he considered to be their right use *in* schools. She had taught long in schools herself, and earnestly advocated all that was necessary to teach the elements of art there. It seemed to her that, by the plan described in the paper, textile fabrics, as well as art objects, were to be presented to the notice of school children. Considering how many of our people live by manufactures, this would be quite right. In fact, the variety of beautiful things which the Manchester Society proposed to show was very great.

KNOWLEDGE AND LOVE OF ART COMPATABLE WITH SIMPLICITY OF LIVING.

She felt, however, that it was going a little too far to say that the study of art would deepen family affection. Affection between parents and children, and between husband and wife, had surely a stronger hold upon our nature itself than to depend upon art culture, though such culture did refine the national mind, and might very much affect our national industry. The great thing in art education was to steer between two things—cultivation of taste, and the introduction of needless luxury and of a variety of wants into the homes of the people. If we could cultivate the one and avoid the other, it would be a very happy thing to do.

She could not but think, during the address of that French gentleman who had spoken, how much elegance of taste the French people must have derived from their splendid museums, and yet how much simpler the habits of living were among the middle and poorer classes in France than with us. She quite believed that simplicity in food, in habits of life, in dress, in furniture, was quite consistent with the possession of high artistic taste. * * *

Perhaps it would be allowed to her, as a teacher upon Froebelian principles, to say what she would consider to be the right use of pictures *in* schools.

1st. *There should not be too many*, because that would be distracting to attention.

2nd. *They should sometimes be changed*, so as to bring Nature's own teaching before the children. If possible, the pictures should accord with the season. Thus, at the proper time of year, pictures of harvest or vintage work might be shown, so that the children might take home with them ideas and conceptions they could never have had before. She would illustrate the value of pictures by her own experience. When she first saw the Rhine, it did not seem new to her, for she had, long before, seen some very lovely pictures of it; and as she went along, it did not diminish her enjoyment, that she seemed to have seen so much before under the artist's instruction, for he had chosen so many of the very finest views.

3rd. *Portions of the pictures, &c., might be copied by the children.* It might only be possible for them to copy a portion of a pattern or picture, but it would encourage them if they might imitate something done by a more skilled hand. They would the better realize what is meant by the saying, "Whatever man has done, man may do again." * * *

The Chairman (Rev. Dr. Graham) said he was glad the papers had been listened to with so much attention, and had provoked an interesting discussion. He begged to thank the audience for the time and patience they had given to the various speakers.

PRESS COMMENTS ON THE EXHIBITION.

The following notice of the exhibition of the art material for the adornment of school-rooms, and for the use of schools, provided by the Manchester Art Society, is from a communication by a correspondent of the Manchester (England) Guardian, which appeared in that journal July 8, 1887, and is the article referred to in the note to page 9 of this volume.

The absence of all beauty in many of the homes of the English poor in cities, and in mining and manufacturing districts, and the existence of the repulsive ugliness incident to so many phases of the industries of modern life, against which Ruskin so eloquently inveighs, is clearly indicated in this article. The rural beauty, due to abundant verdure and to the high culture which is so commonly associated with English country scenes in contrast with much of American scenery, is, in the mining districts, the "black country," replaced by unmitigable ugliness and desolation; while, in the busy seaports and in the thronging cities, there are vast numbers of children whose lives are passsed amid squalid surroundings, and who grow up in absolute ignorance of the existence of the more common flowers, birds, and animals, and of all knowledge of rural sights and beauties, as Mr. Horsfall points out in the preceding pages.

The development of the imagination, the healthy exercise of that imagination which is inherent in the child, is, undoubtedly, as the writer in the Guardian points out, an alleviation of many of the ills of actual life, and may be the lever which will lift the child into better conditions; for, to apprehend the ideal of better things, is the first step towards an endeavor to gain them.

(b) "*PICTURES FOR SCHOOLS.*"

An exhibit at the Exhibition which deserves something more than a passing glance is No. 68. It consists of a set of pictures intended for use in elementary schools, and shown by the Manchester Art Museum, which has actually lent pictures of this kind to elementary schools in Manchester and Salford. It is perhaps well to add that the exhibit is situated on a wall facing the carriages on the right of the great clock, to which spot it is to be hoped that lovers of art and all who are interested in the education of children will make their way.

PURPOSE OF THE COLLECTION.

The idea of the Art Museum Committee, to which the pictures belong, is to lend them from time to time to the various national schools in Manchester and Salford, hoping that the children of these districts may thereby gain some knowledge of the beauty of form and colour in nature and art which "civilisation" has blotted out of their everyday surroundings. That the object is an excellent one no one will deny, and it seems to be carried out on sound working principles.

CHARACTER OF THE COLLECTION.

The works of art are of the most varied character, consisting of chromo-lithographs, wood engravings, line engravings, casts of statuary, and decorated textile fabrics. The pictures may be roughly divided into three classes. Those of birds, trees, flowers, architecture, and historical portraits are strictly educational, in the pedantic sense of the word; they show form of colour, but tell no story; this is a large class. Then there are landscapes with direct educational tendency, showing places of geological or geographical interest. And lastly there are pictures pure and simple, whose educational tendency is indirect. To our thinking these are most valuable, if the children can be got to care about them. There is much virtue in that "if," and the question can only be answered by personal experience. We must not forget a very striking feature of the collection — the labels, on which are written explanations of the pictures. These are in general excellent, though occasionally a little too technical and difficult for children; but doubtless the children's teachers will profit by them.

USES OF SUCH COLLECTIONS.

The collection has two uses — to teach facts and to inculcate fancies. The latter object is certainly the one with which I have most sympathy. The great difference between life in the middle and upper classes and life among the lower classes is that the latter is almost wholly deficient in fancy and imagination. The griefs, sorrows, and toil of both rich and poor have a strong family resemblance; but whereas education and a good income give one class the means of possessing, or at least enjoying, art treasures, ignorance and poverty are left to grind through life without the aid that art can undoubtedly afford. The society for providing pictures for schools is desirous, then, of stepping in and equalizing matters as much as may be between rich and poor by teaching the children in the schools to enjoy pictures. I must, however, venture to doubt whether the examples of Turner, Watts, or Walter Crane, are of a nature to lead children to love pictures. More examples of Caldecott are what is wanted — clear, simple, humorous sketches of children and animals,— or some of Tenniel's "British Lions," or reproductions of his "Alice in Wonderland" sketches, if those were obtainable. But perhaps for most children Caldecott is best, because he is funny, and fun is fancy's poor relation. Walter Crane is too involved, and I never remember children enjoying his pictures by themselves. And that is the test. Valuable as the engravings from Watts and Turner may be, their fancy needs explanation to the children; and even if they comprehend the teacher, their imagination has not been aroused to half the same purpose as it would be by some of Caldecott's dog pictures, which they enjoy by themselves, without labels or instruction. We should recommend adding to the third class simpler and, if possible, humorous pictures for the use of infant classes. Caldecott's dogs will be enjoyed by children of two years of age and under, and if once a picture-hunger is induced at such an early age as that, the Committee of the Manchester Art Museum may feel sure that their further efforts will not be in vain. That the Art Museum will spread information having its practical commercial value we have not the least doubt, and for this it deserves support. But it aims at higher things. Its endeavour to infuse the light of fancy and imagination into the dark lives of the children of the poor is a work of charity, for which it deserves encouragement at the hands of those wealthy and cultivated people whose life is spent among things of beauty.

(c) "*ARTISTIC SCHOOL SURROUNDINGS IN FRANCE.*"

In a recent number of The American Teacher, a Boston Monthly, occurs the following instance of the estimate in France of the value of beauty in school surroundings. It is an article in the March, 1888, number, by Dr. L. R. Klemm, of Ohio, entitled "Chips from Educational Workshops in Europe," with a sub title of "Making Beauty Contagious:"

> * * * Many are the indications which tend to prove the progressive spirit that has entered the French school, but I cannot enumerate them here for want of space. One instance may suffice, one which will be found characteristically French.
>
> Let me tell what I saw in a convent school that had been changed into a city school. The city authorities, either the council or the school authorities, when assuming control over the school, ordered the walls of the class-rooms to be decorated with fresco paintings. That order was carried out regardless of cost. It is a charming sight to see these walls beautifully bedecked with exquisite workmanship, truly artistic allegorical figures in glorious, luminous colors! It was said, when the matter came up for deliberation, that many pupils never had the chance of seing beautiful rooms at home, living in squalid, filthy houses. They should therefore be surrounded by beauty in rooms where they were obliged to live six hours every day.
>
> I mention this fact because it is freighted with the suggestion to imitate it. The American people, perhaps the richest nation on the face of the globe, can well afford to surround its children, the hope of the future, with things of beauty, which are "joys forever." Æsthetic education, however, is yet in its infancy in America. The children need to see beautiful things to learn to appreciate them. Much is done with us by beauty-loving lady teachers, who succeed with hardly any means at their disposal to decorate their school rooms with pictures, flowers, etc., but it should be preached from the housetops that the schools ought to be perfect treasure-boxes of art and beauty. Money spent in that direction is never thrown away. We must accustom our children to beauty and make beauty infectious, just as Superintendent Howland of Chicago says that the good should be made contagious.

A previous article in the same issue illustrates from an actual school-room in Boston, how, by the free use of bright colors, effected by placing Japanese umbrellas, fans, panels, etc., on the walls, a room which, owing to its surroundings, had little of sunlight, was made to seem cheerful, bright, and attractive. There is a world of suggestion in these two examples as to the important relations of school-room surroundings to education. If the costly French way is not possible, certainly the inexpensive adornments used by the Boston school teacher are within the reach of most, if the requisite taste and tact are possessed by the teacher. To make the school-room attractive, to make the daily surroundings such as will train the taste and awaken a love of beauty, these are certainly desirable and attainable objects.

(d) INDUSTRIAL TRAINING AND ART SURROUNDINGS AS EXEMPLIFIED IN A FAMOUS ENGLISH SCHOOL.

In a most interesting illustrated article in the September, 1888, number of "The Century" Magazine, Mr. George R. Parkin describes the now famous school of Uppingham, England, as "an ancient school worked on modern ideas." It is a recital of the life work and wonderful success of a great teacher who, in 1853, took charge of this boys' school, founded two hundred and seventy years before, and having, at that time, twenty-five boarding and five or six day scholars. When the article was written, early in 1887, Mr. Edmund Thring, headmaster, to whose inspiring energy and practical wisdom the steady growth and surprising development of the school was due, was still at his post, though in October, 1887, before the article appeared in print, he died.

Of the school as it was when he was first appointed headmaster, Mr. Parkin says: "The field was small, but a man had come who had decisive views about education and with faith, courage, and will to match the strength of his convictions. Around such a man the horizon widens." Soon there were three hundred scholars, a limit which he would never enlarge however great the pressure. The limit of a class was twenty. The boys were domiciled in different houses, thirty in a family, and each boy was sole master of a small study room apart from the sleeping or living rooms. This school, in which the pupils remain until ready to enter the Universities, entering the school at ten years of age and remaining till nineteen, is of the same class of English public schools as are Eaton, Harrow, and Rugby; to which the great American fitting schools, such as Phillips Academy, Andover; Williston Seminary, Easthampton; Phillips, Exeter; etc., are analogous.

It differs from the free public schools of America in being the home, as well as the school of the pupil, and much that adds interest and value to the account of the methods of the school, is of necessity inapplicable to the conditions of our public school education. Still, as Mr. Thring adopted in his classes the graded system of our best public schools, so there are some lessons of value for our public schools to be found in his methods. As an educational writer of authority Mr. Thring is well known to American educators as the author of the two works, "Education and School" and "Theory and Practice of Teaching."

Whatever in the way of buildings, or apparatus, he thought conducive to the best interests of the boys, was secured; without regard to trouble or expense. Speaking of the various groups of buildings which have grown up in connection with the school, Mr. Parkin says: "The fact that during Mr. Thring's mastership about half a million of dollars has been invested at Uppingham in perfecting the school machinery proves that he has, in this respect, tried to reach his own ideal."

But interesting as is this account of a remarkable teacher and a phenomenal school, it would have no place here were it not that having the will and the means to adopt freely whatever methods he thought desirable, Mr. Thring, although in charge of the kind of school usually devoted to a strictly classical course of education, did not hesitate to enlarge that course in many directions.

Among these innovations were those which this Report is especially designed to promote throughout the free public schools of the United States, and it is extremely gratifying to find such support and such precedent as is here recorded. As an essential part of the general education of boys intending to enter the University, there were provided all the means for such an industrial practical education as is given in our American Manual Training Schools. The development of the æsthetic faculties are also carefully provided for, as well by special instruction, as by the artistic adornment of the Great School Room,—the general meeting place of the whole school,—and the architectural beauty of the Chapel.

In each of the Assembly Halls attached to our large public school buildings there is the same opportunity, and equal room, for like artistic surroundings; an opportunity that has been availed of, as we have already recorded in the opening pages of this volume, in a girls High School in Boston; and as is to be seen also, in some degree, in many school and class rooms throughout the country.

The reasons given below for this enlarging of the curriculum of school studies and occupations being based on the essential characteristics of human nature, are as applicable to every public school in the United States, as to this particular English school.

"In training the young, plenty of employment is the secret of a healthy moral life. * * * Where a school receives some hundreds of boys, each one of whom, stupid or clever, it is intended to train, provision must be made for diversity of taste and ability. This is necessary, because, as every teacher knows, or ought to know, it is essential to the happy life and healthy moral development of a boy that he should always have some field in both work and play where he can maintain his self-respect among his fellows. A lad who has not the capacity to excel in the main studies of a school, or strength to distinguish himself in its hardier sports, may often achieve excellence in minor subjects of study, or acquire skill in other recreative employments. A school is not a perfect training place which has to crush the weak in the process of developing the strong, either at work or at play.

"It is for these reasons, and in his effort to do justice to each boy, that Mr. Thring, although the staunchest of believers in the pre-eminent value of classics as an instrument for high intellectual training, was yet among the first to break through the tradition of Eton and the great schools generally, by making large provision for other subjects. French and German, science and mechanics, drawing, painting, and music, are thus provided for. On music, especially, much attention is bestowed for the sake of its humanizing tendency and its power of adding to the happiness of school life. * * * One-third of all the boys in the school learn instrumental music. * * * I believe that Uppingham makes fuller provision than any other existing school to meet the necessity for diverse employment or healthy amusement outside of study hours. * * * The gymnasium, opened in 1859 under the care of a competent gymnastic master, was the first possessed by any public school in England.

"*For many years* the school has had in operation a carpentry, where any boy, by the payment of a small fee, can secure regular and competent instruction in the working of wood and in the use of carpenter's tools. In 1882 this field of useful manual occupation was enlarged by the construction of a forge and metal workshop, where skilled instruction is similarly given, and a boy can go far towards making himself a competent mechanical engineer.

"In the same category may be included the school gardens. These gardens, opened in 1871, cover some acres, and are laid out and planted with much taste. Here a boy may have alloted to him a small plot of ground for the cultivation of plants and flowers.

"In connection with the gardens is an aviary, where the lad with a taste for natural history has an opportunity to observe the life and habits of a considerable collection of birds. * * *

"There remain to be mentioned two important, and in Mr. Thring's view, essential, parts of the school appliances. The first of these is the great school-room, erected at a cost of £7,000, and opened in 1863," * * * (the common assembly room where the whole school is to meet). "At Uppingham it is made to serve a further purpose. In accordance with Mr. Thring's idea that the surroundings of school life should be as beautiful as possible, and such as to give honor to learning, this room has been decorated with a series of elaborate paintings done under the direction of Mr. Rossiter, chiefly illustrative of the great names in ancient and modern literature. Presiding at the celebration of Founder's Day in 1882, Earl Carnarvon said of this room: 'Since the days of the Painted Porch in Athens, I doubt whether training has ever been installed more lovingly, or more truly, or in a worthier home.' Besides the school-room is the chapel, built after the designs of Mr. Street, at an expense of £8,000."

It thus appears that, in this school, where judging from other schools of its class it would hardly have been anticipated, practical training in industrial education has been introduced; and, also, that the value of noble artistic surroundings has been fully appreciated and splendidly illustrated.

III.

MR. LELAND'S EXPERIMENT—HAND WORK IN PUBLIC SCHOOLS.

Mr. Charles Godfrey Leland, of Philadelphia,—who long ago established an enviable reputation as a writer and acquired a recognized position as an American author,—after many years' sojourn in foreign lands, where, as it appears, he utilized his opportunities for observation to good purpose, returned a few years since to reside in his native city. His attention having been called to the needs of some industrial training for children both in Great Britain and the United States, he conceived the idea that many of the "minor arts," as he calls them, commonly practiced during the middle ages in producing the profuse ornaments in vogue at that period, which have in our day been either superseded by machine-made products or numbered among the "lost arts," might be successfully rediscovered, and, through the medium of children, popularized. After giving the subject much attention in England and elsewhere, he published the results of his studies and experiments in a little book called "The Minor Arts," in which the practicability of establishing industrial art schools for the training of young children in these artistic industries was urged. He put his theories into practice in Philadelphia by gathering a class of children under his personal supervision. This experiment was thought by some as only one of the vagaries of an enthusiastic wealthy amateur, but he so far succeeded as to get his school adopted as part of the public school system of the city, and has given an interesting account of his methods and results in an article published in the Century Magazine, October, 1882. This article, "Hand Work in Public Schools," is profusely illustrated with examples of the pupils' work. Both this article and the little book before referred to are worthy the careful attention of all interested in this matter of industrial art training. The following extracts from the "Century" article explain the manner in which the children are taught to draw, and sets forth the results of this novel experiment:

(a) "*HAND WORK IN PUBLIC SCHOOLS.*"*

* * * The visitor to Philadelphia, who will on Tuesday or Thursday afternoons enter the Hollingsworth School Building, next door to the Academy of Music, may see an interesting sight which is at present without its exact counterpart anywhere in this country or even in Europe, namely, sixty or seventy public school children, from ten to sixteen years of age, girls and boys, engaged in different kinds of decorative work. At one long table the little ones are busy modelling, painting, and glazing faience, or ornamental clay-ware, which when finished will go to the pottery to be fired, and return as elegant vases, grotesque monsters for match-safes, flower-baskets, or such other caprice as the fancies of the juvenile artists may dictate. And what they execute is no bungling work; it brings a good price in the

market. One little damsel, small for her twelve years, has a giant Frankenstein of a frog before her, which she is deftly shaping, and which with its gaping jaws seems almost able to swallow her. There are others, nearly all without even a drawing to guide them, covering cups with flowers, and making curious ware with all the confidence of the most experienced workmen. After all, it is nothing more than many a visitor has seen done by little children in the art-potteries of Spain; but, strange enough, one never thinks of American youth as able to do what seems natural in foreigners.

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*Century Magazine, October, 1882.

ART NEEDLE-WORK.

At the next table are girls engaged in art-needle-work. This certainly is natural enough employment for such little maids, yet if the stranger will look into it, he will find even here a novelty. All the pupils are obliged to draw their own patterns. Another strange idea is also promulgated here: to those who say that plain sewing should be the first needle-work for children, Miss Elizabeth Robins and Miss Moss, the teachers, will reply that crewel-work and outline embroidery are much easier, and that by familiarizing little girls with the needle in what they most readily learn, they do better in the end with more practical work. There is also another reason for not putting plain sewing strongly forward: of late years in every ragged school and drunkards' children mission, such work has been given so much prominence that the parents of pupils in the public schools have a not unnatural aversion to having it said that their children are taught it gratis. "Let us respect prejudices," as Mirabeau said, and also the methods by which these little damsels are led from æsthetic art up to housekeeping. We shall find this principle cropping out again in the school in all its branches.

WOOD CARVING AND REPOUSSÉ WORK IN BRASS.

Near them boys are carving walnut-wood panels, which will be made into cabinets. They are not of the most elaborate Italian or French finish, but they are quite as good as the old gothic originals which they imitate. It is a curious fact that the average boy, when accustomed to the same kind of designs, turns out very much the same kind of work as the grown-up artisan of the middle ages. He is readily familiarized with the best style of design, but it is hard to teach him machine-finish. This is even more perceptible in the *repoussé* work, brass plaques for the wall, made by these boys. They can reproduce admirable imitations of old German brass salvers, quaint and curious or beautiful, but without long practice they do not approach anything like the stamped brass plates which are now so common. It may be worth observing, however, that the revival of sheet brass *repoussé* work, in these plaques, and in this country, dates from this school. As the art is spreading extensively and rapidly, I trust that I may be allowed to mention that Mr. Karl Krall, of the firm of Barkentin and Krall, the famous artists in hand-made metal work of Regent street, London, has given me credit for reviving, in a book called "The Minor Arts," this interesting industry for amateurs. Embossed sheet brass is used for finger plates to doors, for panels in cabinets or chests, for strips or borders by fire-places, for bellows, and, in fact, wherever ornamental surfaces are required. These boys have frequently filled orders for such work, and there is more than one in the class who has earned five dollars by three hours' labor.

MR. LELAND'S METHOD OF INSTRUCTION IN DRAWING.

At the next tables a number of boys and girls are engaged in drawing. The system pursued here is somewhat peculiar. The new-comer is first carefully taught how to draw a free-hand line with a hard pencil. Are there many of my readers who were taught anything of the kind under the old method? I certainly was not, even by the best drawing masters. The pupil is told to make a line fine as a hair or a cobweb, full-flowing, without rubbing or "stumping," "painting" or "scratching." In the first stage, tracing on ground glass slates, or on thin paper, is encouraged, until the pupil can hold the pencil with ease. As soon as he can copy a simple leaf accurately and lightly, he is told to make a circle and repeat the leaf twenty times in different positions and in different sizes, so as to make a wreath. Compasses and rulers are allowed, or rather their use is encouraged to verify the work. It is rather remarkable that when pupils are obliged to use these forbidden aids, they soon get tired of them. Those who draw in light free-hand, or what may be called the Callirhee, or "fair-flowing" style, learn to draw accurately in half the time which was required by the old method. It is said that in mountain passes the fastest mules are the surest footed, and those who draw most rapidly are the most exact. It is almost needless to say that in elementary decorative drawing like this, no shading whatever is allowed. There is no copying of worn-out lithographs of cows and castles, landscapes and bouquets. The development of simple outline from spirals and waves into lines of construction, and so on to Gothic, Moorish, or Renaissance arabesques, form the first step, and from the beginning, the pupil having the finial given, or selecting one, develops all the design without aid. I have known one very exceptional case in which a girl at her third lesson designed in free-hand a very elegant pattern. It is not unusual for the pupils to manifest a perfect ability to design, even before they can draw the lines respectably. It is also a curious fact that, taking one with another, there is a greater fondness for, and most ability manifested in, the Moorish or Oriental styles of design. My own taste inclines to Anglo-Saxon and Neo-Celtic in decoration, and I find that the elder pupils follow me in this, but that their instincts are Eastern.

It may interest the reader to know that in drawing and design the two sexes are, as regards skill, absolutely equal. * * *

As design is the foundation of all such work, every department of it being nothing but simple drawing worked out with tools, the fact that girls design quite as well as boys is very significant.

AMERICAN IMPATIENCE.

Beyond this I have a still more interesting general conclusion. I have for many years closely observed children as regards their capacity for such pursuits, and I have arrived at the conclusion that the American, while quite as clever as the European, and almost equal to the Oriental, is sadly handicapped by an impatience which in many cases entirely precludes real excellence. This is especially the case with women. I have spoken of Oriental children as excelling in decorative art. I have never seen anywhere children who were capable of such work as I have looked at by the hour being made by little girls and boys of six and seven years in Cairo.

WHY ART WORK SUCCEEDS BEST IN THE TRAINING OF CHILDREN.

It was in Cairo, and at Miss Whately's school, that there came upon me, as by inspiration, the solution of a problem which I had been seeking for years. This was the possibility of training children of both sexes, while yet in school, to learn how to make a living, or at least to teach them to use their hands. That this was allied to developing quickness of perception, or cleverness in general, I also believed, for great writers long ago held that this might be true. The first and most natural thought to a practical man would be to teach "trades"—shoe-making, carpentry, printing, and filing metal. But I found on inquiry that the practical men had tried all these in schools, and in vain. Such work required too much muscle, and brain, and time, and though they might succeed with sturdy boys, what were the weak ones to do?—and, above all, what could be done for the girls? * * *

In this school I saw children, almost babes, working *vis-à-vis*, with a frame between them, the most beautiful double embroidery "out of their heads," without patterns. Subsequently I saw this in the bazaars, where I also found small boys with tools as rude as those of English tinkers, making exquisite jewelry. I had before in Switzerland, Bavaria, the Tyrol, and in Italy, found children quite as young carving wood with exquisite skill. I learned that it was the same as regarded *papier mâché* in Persia, pottery in Spain, and soap-stone and varnish work in India. Children could also set mosaics and inlay wood. In fact, I found that all the decorative arts, such as make a house beautiful, were all within the power of women and children and the weak—of those who in this life are generally mere idle dependents.

PERSONAL EXPERIENCE.

But it was necessary to test all this. Of all these arts I knew nothing practically but a little wood-carving and a very little drawing. I went to work to verify my theory. I hammered brass and worked in waxed leather. Mr. William Morris spoke to me of the latter as a lost art. So it was; but by research and inquiry I found how to revive it. I experimented with young pupils. I came to the conclusion that as the flower precedes the fruit, so, in education, decorative work must precede the practical, simply because it is easier. We can set children of six years, profitably, at modeling in clay and setting mosaic cubes, the latter being indeed akin to some of their favorite games. Very soon they will carve wood or embroider. All the time they are becoming gradually familiar with working drawings or patterns and tools. The different arts are so easy, that within a few months many pupils can master several of them. As the boys grow older they can be advanced, step by step, to technology or the most practical mechanical pursuits. Even if a boy has only carved panels or modeled in clay, he does not find himself like a cat in a strange garret when taken into any kind of a work-shop or factory to learn a trade. It has been said by experienced and practical men that, in nine trades out of ten, a boy who can draw well has a vast advantage over one who can not. It has been demonstrated in the Philadelphia school that every child can not only learn to draw, but to use tools; nay, to earn money while at school. * * * *

The gratitude of the pupils and their general good behavior is remarkable. There are among them representatives from every public school in Philadelphia, and their quiet demeanor is remarked by all visitors. They are all ladies and gentlemen. * * *

INDUSTRIAL TRAINING IN SCHOOLS SURE TO COME.

I pointed out long ago in a published lecture which I am happy to learn has given a suggestion and an impetus to others, that the present decay of the apprentice system is rapidly rendering industrial education in schools an absolute necessity. The education of the future will embrace hand-work at every stage, from the kindergarten upward. It will be artistic at first, because art is easy, but gradually it will ripen into the practical or technological. It is proposed in this Philadelphia school gradually to enlarge the scope of instruction with the annual appropriations, until all that is most practical which can be taught shall be included in the course.

It was due to Mr. Edward J. Steel, the President of the Board of Education, and Mr. William Gulager, with his colleagues of the industrial art committee of that board, that this experiment was established, and that the funds were appropriated to carry it on. So little was then known of the subject that the fact that these gentlemen at once grasped it in all its possible results, is very much to their credit, and testifies to their fitness for the influential positions which they occupy. In England the great art schools had been tried and found insufficient, and then came the industrial schools in Russia, England, France, and Boston. This was better — but something still remained to be done. This something was to make hand-work a part of education in all public schools. And this is what the Philadelphia experiment has demonstrated to be perfectly practicable. * * *

In his late annual report before the School Board of Philadelphia, President Steel says that "Mr. Leland has been assisted to demonstrate the feasibility of making industrial education part of the training of the public schools. It is now generally conceded among enlightened people that manual training must form a part of every system of education which aims at developing the faculties. This manual training must, of course, be of a preparatory character — the training of the eye and hand in design, and the principles of construction. The progress of the work has been steady and promising." Mr. Steel here announces a truth, which he was one of the first to grasp, that such work is inevitably destined to form a part of all public school education. Some years ago, in England, when I was engaged in studying and experimenting on this subject, I discussed it with Mr. Antony J. Mundella, M. P., who at once suggested that the subject should be brought before Parliament, and expressed a hope that he himself might be the means of doing so. It is no extravagant prediction that the time will come when every legislative body in the world will take cognizance of manual labor, based on drawing, design, and decorative art, as an essential part of education in every school.

Shortly after the publication of this illustrated article in the Century, Mr. Leland, at the suggestion of General John Eaton, then U. S. Commissioner of Education, prepared a practical treatise upon the topic of "Industrial Art in Schools," with a view to the promotion of the introduction of such artistic industries as are suitable to children. This paper appeared as one of the regular Circulars of Information of the Bureau of Education.* By those interested in the educational and economical problems of the present day, this little pamphlet will be valued as an original and very practical contribution to the discussion now going on as to what, if any, modifications are needed in the training given in the public schools.

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*Circular of Information of the Bureau of Education.—"No. 4. 1882. Industrial Art in Schools, by Charles G. Leland, of Philadelphia. Washington, Government Printing Office, 1882. Pp. 38."

(b) *LETTER FROM MR. LELAND.*

A note of inquiry addressed to Mr. Leland on the eve, as was then supposed, of the publication of this Report, as to whether he desired to add any further word to the "Century" article, or to "Circular No. 4, 1882," elicited the following letter, which, with exception of a few personal references, is given in full:

INTERVALE HOUSE,
White Mountains, N. H., Sept. 19th, 1883.

Dear Col. CLARKE: It is with very great pleasure that I reply to your kind letter of Sept. 11th * * * . I have indeed something very important to add to the Circular No. 4, and I have been wondering how to get it properly before the public. * * * .

In a late number of the Vienna Montagsblatt Review, the very eminent Carl Werner, in two long articles, reviews the circular. He puts my method in advance of all others, and says that Germany is behind hand in never having really recognized the principle that all the minor arts are only *applied design.*

Teachers advertise to teach separate branches such as drawing, wood carving, etc. I profess to teach design and *with* it 50 arts if you will;— stencilling, modelling, etc., all being possible and all easy, if the pupil can design. Many of my pupils have thus learned in one session to design, carve panels, repororsér metal and work in leather, *well.**

But Professor Werner objects that my system only embraces *art* and is not applicable to agricultural industry. He might have added housekeeping or domestic economy etc. Yet all this formed a part of my original system, only it seemed to me that it would overburden the Circular, had I written it all out. This is what I projected.

1st. That by means of a very elementary hand-book, boys in all country schools should have their attention called to farming as a very simple science. They should be told what a farm *is*, what are its subdivisions; what a farmer should know and what his duties consist of. This is, so to speak, the Design which he will apply to the many arts of agriculture. It is a great mistake to suppose that theory or rules interfere with practice. Very young children can be made to think even of farming as a whole, more clearly, by having their attention called to it in this way. I would have the Bureau prepare and issue such hand-books in connection with the Bureau of Agriculture.

2dly. A girl who is to be a housekeeper should have her attention called to domestic economy as a science. She should be made to realize that it means to understand several branches, all regulated by book-keeping and carried out by careful attention and consideration. Her mind should be called to cookery, washing, purchasing supplies, cleaning, etc., as parts of a whole. This would be simple and easy enough, and it would be again the Design to be applied to these minor arts.

Decorative design is a theory — it calls the attention of the boy or girl to the smaller *arts* as a point of departure. One can, in a like manner teach a very simple and easy theory of agriculture or housekeeping. Book-keeping is "business" in the form of a general elementary design.

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*The following item, just now making the round of the press may serve, in a measure, to illustrate and confirm Mr. Leland's statement that his fundamental art of Design comprises the training readily applicable to "fifty arts."— The writer of the paragraph it will be noticed uses the words "trades" as an exact synonym for "arts" as used by Mr. Leland.— I. E. C.

A JACK OF ALL TRADES.

Charles R. King, of No. 66 Charter Oak street, may be said to be the most multifarious tradesman in the State of Connecticut, having mastered no less than twenty-two distinct trades, and being, what is still more strange, a first-class workman in every one of them. He is not yet 70 years old, and is vigorous and hale and able to do a man's work any day. Here are the vocations he has learned: Blacksmith, house carpenter, cabinet maker, ship joiner, ship carpenter, glass-cutting and grinding, shoe making, harness making, wheelwright, iron machinist, wood machinist, mathematical instrument making, wood carving, pattern making, clock making, cooper, carriage maker, gardener and florist, moulder, patent office model maker, plumbing and locksmith. He is a genius in mechanics, and ascribes his ease in learning trades to "an accurate eye and a mechanical head." In addition to all the above-named useful avocations may be added the fact that Mr. King is a good musician and one of the best rifle shots.—Hartford Times.

But the general principles of any business, of shop keeping, etc., admit of being practically described, and therefore of being taught.

This is what I would state as introductory to my theory of Industrial Art in schools. As regards the time question, all these things are now taught with great waste of time. A boy or girl will learn anything in less time, if he or she has begun by thinking it over as a whole. It is like studying the map of a country before a battle, or before travelling. If any object, that this is too "*theoretical*," I can only reply that the same was said by many of my system of teaching the Industrial Arts — which has now been thoroughly tested. I have practically proved that I can teach any child of from 12 to 14 to learn while attending school either to make $8 a week on leaving school or to be so prepared for some calling as to form its equivalent. * * *

I should add that there should be a hand-book, or manual of housekeeping, for all girls to study. Of course it should be very simple, but such as to make them *think* of housekeeping as an art.

The Circular No. 4, 1882, has been extensively read in England, and had attention called to it in the reviews and by men in Parliament, etc. By the way, I observe that there is great impression among the educational reformers in England as to education in cookery — art — farming, etc., which makes me regret the more that I did not distinctly state in the Circular that there is one clear principle in all *practical*, or manual, Education — i. e. that Design, or a system, underlies it all, and that this should be carried out by teaching children in simple form the theory of a calling, or occupation, or art.

By design, I make children think of and comprehend, many arts. By a little easy teaching you can make them *think* of agriculture or housekeeping or business as a whole, and thereby simplify the practice.

Hoping that all our efforts in the cause may prosper and with very sincere gratitude to you for your kindness, I remain

Yours very truly

CHARLES G. LELAND.

P. S.—There are a few facts not in the Circular worth stating.

1st. That I find that any child of from 12 to 15 years can, in 50 lessons of 2 hours each, so learn outline decorative design as to be a desirable assistant designer, or salaried pupil, in a carpet factory.

2dly. That, in a majority of cases, pupils can in from 60 to 80 lessons learn so much of design and modelling in clay, as to be able to secure paid situations in metal founderies and many other *ateliers* where the art is practised.

3dly. That I have a class of 25 pupils, girls and boys, every one of whom could to-day earn $8 per week by steady work.

4thy. That boys and girls who can design even a little, are very well qualified to become salesmen or buyers in dry goods establishments, that they are preferred by dealers in artistic materials, and in many kinds of business which would not seem, at first, to need any knowledge of art. All of this has been fully proved by instances of my pupils having obtained such employment through their knowledge of design, color, modelling, etc., I am fully prepared to give a number of instances.

It will be observed that Mr. Leland makes some suggestions in harmony with the desire expressed by Professor Runkle,— (in a similar letter, given in the account of the mechanic art school of the Institute of Technology*),—that some one should show the philosophy that underlies all teaching of art, and so help to solve the perplexing problem of how to modify the course of public school instruction to meet the practical needs of the present day, without too great innovation; conserving what is undeniably excellent in the existing system, while adding those elements that are so urgently demanded.

That the comprehensive view of each subject of study which Mr. Leland suggests, would lead to a better knowledge of the relation of its various parts, is undeniable, whether such comprehension is within the capacity of most school children may perhaps be questioned;— much would depend upon the ability of the individual teacher.

The statements as to the progress of the pupils in acquiring the art knowledge and of the direct gain in wage earning power, are important as well as interesting.

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*See Part III, Chapter VIII, of this Report.

(c) *MR. LELAND'S BRIGHTON ADDRESS.*

Sometime after the preparation in manscript of the foregoing pages, Mr. Leland took up his residence in England; where he has been busied in preparing and publishing various books on his special art training topics, and in connection with "The Home Arts Institution;" a society established to promote the dissemination of his art educational ideas by the distribution "of models, and the forming of classes in the minor arts, all over England."

It appears that he has for some time resided in Brighton, and just as this work is passing through the press, an interesting glimpse is had of him, through a copy of an English journal just received, as he appears in his English home, and among his English friends; who seem to have welcomed him as kindly as the leading educators of Boston welcomed the English Walter Smith in 1870. This journal, "The Sussex Daily News, Brighton, England" (issue of January 13, 1888), contains a full report of the distribution of prizes to the successful pupils of "The Brighton and Hove School of Science and Art"; on which occasion Mr. Leland had been asked to deliver the address and distribute the prizes.

Such occasions, as is shown by other similar accounts quoted in this Report, are made important in England by the addresses delivered by distinguished speakers; often by Royal Princes, Prime Ministers, or other high government officials. These addresses are frequently to be ranked among the best contributions to the live educational discussions and literature of the day.

This address by Mr. Leland furnishes no exception to this general statement, and is of sufficient interest and importance, and so admirable as an example of artistic literary workmanship, as to justify very full quotations here; since the speaker not only gives a clear, succinct statement of his own system and experience in introducing his special methods of training in the Minor Arts, but places in effective contrast the situation of the world as it existed in *his* youth, with the surroundings amidst which the youths he was then addressing are placed.

The amazing changes effected, in less than a half century, through the discoveries made by scientific investigators and the practical applications of such discoveries to the needs of man, which contribute in countless ways to the health, comfort, convenience and material prosperity of the race, are all due, as the speaker eloquently shows, to Education; to that kind of training in science, and the direct practical application of the knowledge acquired by individual researches, which it is the province of the English Schools of Science and Art to promote; and which, in all countries of the civilized world, characterizes what is known as the "New Education."

This address is, therefore, of far more general interest and significance than if it had been confined to the single purpose of setting forth the speaker's particular hobby in art education.

It should, perhaps, be re-stated here, that the purpose and province of this Report is, to set before the reader, as fully and fairly as possible, the various systems of industrial education, and of industrial art education, with the arguments and opinions of their promoters and opponents; so as to furnish to students the material requisite for forming for themselves an intelligent judgment upon the plans presented. There is no intention in this Report, as there has never been on the part of this Bureau in any of its publications, of announcing any *ex cathedra* decisions concerning mooted educational questions.

This plan of the Report leads of necessity to the collection of a very large and somewhat miscellaneous body of material. It is hoped, however, that those interested in the study of the subjects included, may each find in this collection something of special interest and value to themselves.

One of the most important functions of the United States Bureau of Education, as set forth in the enactment creating it, is to collect and disseminate educational information. It is nowhere charged with the duty of proclaiming any creed, or of setting up any shibboleth.

The "Circular" ("No. 4, 1882,") written by Mr. Leland, giving an account of his Philadelphia experiment in teaching children the Minor Arts, was published by this Bureau, as is the material here collated, to furnish information as to the new methods of education which he had adopted; not with the intention of giving any endorsement by this Bureau as to the value of those methods, other than the evident one that they were considered by the Commissioner to be of sufficient importance to warrant their investigation by Educators.

The following are the extracts referred to from the report in the Sussex Daily News:

BRIGHTON AND HOVE SCHOOL OF SCIENCE AND ART.

DISTRIBUTION OF PRIZES.

The annual distribution of prizes and certificates in connection with the Brighton and Hove School of Science and Art, Grand-parade, Brighton, took place in the Music Room at the Royal Pavilion, Brighton, last night, and as on former occasions the gathering was a very large one, almost every seat on the floor of the room being occupied. Mr. F. Merrifield, Chairman of the Committee, presided, and there were on the platform Councillor Colbatch Clark, Mr. O. A. Fox, Mr. Daniel Hack, Mr. C. G. Heathcote, Mr. E. Hamblin, Mr. W. R. Lee (Members of the Committee), Mr. B. Lomax (Hon. Secretary), Mr. C. G. Leland, Mr. J. W. Carden, jun. (Clerk to the Brighton and Preston School Board), Mr. Sullivan (Head Master of the School of Art, Hastings), and Messrs. Alderton, E. J. Bedford, F. E. Clifton, H. Edmonds, A. Fisher, W. Jago, A. King, and E. Young (Masters at the School).

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MR. C. G. LELAND then proceeded to deliver an address to the students. On rising, he was received with loud applause.

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He said: * * * Work is the watchword of this half of the 19th century. To-day it is the workman who is the warrior. When we think of those ages when every man took a turn now and then at stabbing, lancing, or archering at other men, we are thankful that we live in more peaceful times. But we do *not*—on the contrary, we are fighting more generally than ever. And according to the standard even of those wild and early ages, our battle is grander and more god-like. For what was it that Odin and Thor and all the deities of our ancestors were really represented as doing? It was in overcoming the giant foes of Nature—in levelling mountains, making roads, destroying the monsters of barbarous vice—in replacing flint with bronze or iron. True the iron was not very good. In the Icelandic Saga of Gisli we are told that the famous sword forged by the dwarfs, which killed a man every time it was used, was of such soft metal that the warrior who wielded it was obliged every now and then to straighten it out under his foot—in fact, it was quite as bad as some modern bayonets, furnished by contract, of which you may have read. History repeats itself. But it was after all a great strife for culture—and for this strife you are now in training and destined to take, as I hope, no mean part.

THE MODERN ERA.

I met lately in two very different publications statements to the effect that about fifty years ago the world was still to all intents, as regards daily life, about where it had been during the middle ages. At that time I lived in Philadelphia,—the second city as to size on the whole continent of North America. I can remember when steamboats were few and far between, when railways were to us unknown, when friction-matches, and percussion-caps, and sewing machines, and omnibuses, and steam reapers, and telephones, and saccharine, and oleo-margarine were all in the dim and remote future. I had travelled over Europe, and I was of age before I even saw an electric-telegraph wire. Yet all of these things put together were not of so much real value as that which I now see here before me.

EDUCATIONAL OPPORTUNITIES OF THE PAST AND PRESENT CONTRASTED.

Let me explain myself. To create all these wonders, Education was needed—Education in Science and Art—for few men now realise the extent to which that was then wanting. When I think of the extraordinary difficulty which George Stevenson had even when he was not in difficulties as regarded time and money, to get a little scientific learning, the work of all the great inventors of those days seems to me to border on the miraculous. It is the old story of Odin and Thor over again. And yet what has been said of those days will be said again of these. You have better weapons—handle them so that in turn and time you too may be remembered as having made your mark. For to make a mark in something is now possible for every one of you. In this School in Brighton, which is one of the very best in England, you enjoy advantages of education which were not, a very few years ago, attainable anywhere in the world. The younger among you who have grown naturally into it cannot realize how much better off you are as regards your future than were those—I do not say of the last generation—but even of a decade since. It is not very long ago since "a first class education" was, for all practical purposes, more of a hindrance than a help. As one who studied at four Universities, until he was 25 years of age, and who has since been (as I trust) not backward in advancing the new system of technical and art-education, I venture to say that I speak from experience. Scholarship and Translation—Translation and Scholarship!—what is all this endless shuffling of the old cards into new games, and tricks, but mere play when compared to the stupendous miracles which are being wrought by Science and Art? Remember that in a practical education you are all being qualified to make not only a living but what is *more*, to make—a life, to do something if you earnestly determine on it which has never been done before you by any one. For so endless are the opportunities of Science and Art that it is not possible for those who pursue them earnestly to miss finding at one time or another the mystery which we call fortune. There is an Italian story to the effect that to every man, once in his life-time, comes the Fairy of Opportunity. Some neglect her advice through vanity, others from ignorance, but to those who have the sense to seize her teaching she comes again and again, with new gifts. Another form which this fairy takes is that of a good Education, which has been made the most of.

HOW TO MAKE THE MOST OF OPPORTUNITIES.

Now let me say something to you as to how you may easily make the most of the admirable opportunities which your school affords. Some years ago I attempted—I am happy to say with success—an experiment which had never before been carried out. It was to introduce industrial Art-work as a branch of education to public schools. It was not long before I found that if design and drawing were taught together from the first lesson, the pupil advanced far more rapidly in both than if they were taught separately, and that the less mere copying there was the better. This stimulus to inventiveness made the children think—it awoke quickness of perception—it excited attention and interest. You all know how fascinating it is to feel that while drawing you are also creating or composing something quite your own, and this pleasure attains its height when you know that what you are designing is absolutely correct, because it is according to correct principles. Thus he who makes an outline decorative design on the principle of the vine, of growth—of the development of segments of a circle or spirals attached according to space and balance—cannot by any earthly possibility form ornaments which shall not be beautiful or even perfect. Using a few ornaments—the simpler the better, such as clover or ivy for finials and crochets—it is possible in a few lessons to rival Early English designs, and produce work in keeping with four-fifths of the best ornamental design of any age. Before Ferguson wrote his great work on the Alhambra, great scholars had not solved the problem how the appalling intricacies of Moorish interlacing were formed, but you may, in a little book by Lewis F. Day * master the whole secret in half an hour, and, if you can draw at all, produce them yourselves. After the pupils had attained some familiarity with such design, no curves, whether of the human form or of animals, presented any very great difficulties. If you will reflect you will see that to design is to do something original—to think—to lift your mind above mere copying to creation. It is an awakening of will, and a beginning of thought. I have observed that in children the creating, the consciousness of being able to make correct original designs acted on the whole character. They became more generally intelligent. The School Board ascertained, by careful inquiry, that the pupils who attended the art-school, stood higher in all studies than those who did not. It may be said that such development of the power to design according to the law of organic development, is like making genius by rule. This is perfectly true, and it is also quite as true that the greatest genius is the one who makes the most of rules, or of the laws of Nature to produce from them new combinations and results. Now this admirable education which you are receiving, and which is far beyond anything of the kind which was generally available when I was young, is the supplying of rules and principles which, if intelligently mastered, should awaken in you originality, interest, and action. Do not think, as it was taught of old, that rules can do everything for you; it is you who must do everything with the rules. Lay this to heart; you cannot think it over too deeply. And how to do it will be taught you by the rules themselves, if you study them earnestly, and with interest. Where there is a will there is a way.

NEW OCCUPATIONS OPENED BY ART AND SCIENCE.

We read every day that all the paths of employment are over-crowded and that emigration is the only remedy, while on the other hand there is as loud a cry that foreign labour, guided by superior education in Science and Art, is the true cause of this competition. The real cause of the struggle is not a fight between Protection and Free Trade so much as a battle between education and ignorance. This is the great battle of the age. You are here arming yourselves in a great arsenal to fight for your Fatherland. To me there is more romance in it, more chivalry, than there ever was in all the knighthood of the Middle Ages. That was after all based only on prize-fighting between muscles with weapons, you are to contend with brains and intellect, on a higher and nobler field.

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OPPORTUNITIES FOR WOMEN TEACHERS OF THE MINOR ARTS.

Now if you have studied Science or Art practically, there are innumerable callings, where you will be wanted. There is a great deal said about governesses who cannot make living wages by teaching English, French, and music; but I have found in America, as in England, that a lady who is really qualified to teach and execute the minor arts, such as any one may master in a few months, if she can draw as well as most of the pupils in your school do, need find no difficulty in obtaining work. For there is a rapidly-wakening wide-spreading desire to have children taught how to use their hands in useful arts. There the vintage is abundant, but the labourers are few. And even here, in over-crowded England, manufacturers of many kinds do not find it a very easy matter to obtain young people who have been properly trained to design patterns, or who have been prepared to begin to learn how to do so. For this reason I always in teaching urge the pupil, even in early efforts, to adapt his picture to some given object such as a vase, the cover of a box or a book, the back of a chair or plate. Few who have not tried it can realise how much this system of always adapting drawing to some definite purpose is itself adapted to making practical artisans. It will be no difficult matter for anyone trained as you are to do this. It is characteristic of the present age that it is always striving to blend the useful with the agreeable, and Art with daily needs.

HARD WORK ESSENTIAL TO SUCCESS.

I have been over your school of Science and Art and I find it admirable. It is an honour to Brighton. The familiar sight of all the appliances of Art and Science awoke in me memories of the past, and I longed to be again at my old labours. And as the carpenter is known by his chips, so I saw by the work of the pupils that the teachers are able, earnest, excellent; inspired with interest in the scholars and in their capacities. I find a defect, however in the school, and I am confident that it is one which will be very difficult to remedy. Singularly enough it is a fault which is generally to be found only in the most excellent institutions of the kind. It is that there are not quite enough rooms. And so long as it shall be so well managed, I trust that the complaint may never cease, and that all the halls may be full to overflowing. I dare say that if there were twice as many they would all be full. It speaks well for Brighton that there is here such an appreciation of a good thing when they have it. I have spent altogether about two years of my life in this little London-by-the-Sea — long enough in some countries to entitle me to citizenship — and having left in the due course of living my little mone~ here, am glad to see that some of it has been so well applied.

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* The book here referred to is probably the following. "Every-Day Art: Short Essays on the Arts not Fine," by Lewis Foreman Day, author of "Instances of Accessory Art," etc. "De gustibus EST disputandum." Numerous illustrations, chiefly by the author. London: B. T. Batsford, 52, High Holborn. 1882. Pp. 283. I. E. C.

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EDUCATED LABOR IS HONORABLE.

Lives of mere indulgence, however refined, are no longer regarded with the reverence which was once accorded to them. From the poor man to the peer, work is rapidly becoming essential to a good character and to human example of every type and station. And as I pointed out many years ago in a pamphlet written by me for the Bureau of Education of the United States Government, and as it was repeated by the great Austrian writer on education, Carl Werner, nothing tends so much to make work popular and dignified as the Schools of Art, Science, and Technical Industry which are rapidly extending their influences to every child in the community. This factor in education; this familiarising every child with the elements of some practical kind of work; this blending of the useful and agreeable, is destined eventually to do more good than has been effected by all the inventions of the age, vast though their scope of usefulness may be. To me the most attractive point in the nineteenth century, is its increasing disposition to honour work, and to raise in the social scale all who have deserved it.

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SCIENCE AND ART STUDIES CONDUCE TO BROADEN CULTURE.

I speak of this growing humanity and this elevation of work in the social scale because an institution like the Brighton School of Science and Art is one of the temples of the doctrine. It is a great thought that everything in this world which is good for anything at all, is so in more ways than one. * * * And so in teaching Art as something belonging not to the privileged few but to all who choose to avail themselves of your school, you teach much more than Art. He who raises such homes of culture at the present day builds better than he knows, and marks higher than he means. These are reasons, which are seldom discussed, why schools like yours should be extensively patronised and generally attended. One of these is the fact that training in Science and Art actually enlarges the mind, quickens the intellect, and makes a young man fitter to fill any station. This is generally accepted as a commonplace truism — not one person in a thousand ever realizes its tremendous truth.

I have found by my own experience that children who studied Art industries were at the same time in advance in all other studies, while in general observation and intelligence they were far beyond what they would otherwise have been. It was the old theory that every child has by nature just so much intelligence, just such a quantum of intellect, which might be cultivated, but not enlarged. If a boy had a so called gift or genius for Art he should study it — not otherwise. The most advanced and practical thinkers of the present day have far more hopeful and encouraging views. They believe that Science is capable of developing, I may say of creating intellect. There is in fact not one child in thousands who has any innate gift for Art, but among thousands I never found one who could not become in some way a clever artist. It is easier to learn to draw well than to write well. There was never yet in this world a career worth having which could not be aided by familiarity with Art and Science. I have heard of a little American girl who came to her mother with the great discovery that the word Art was a portion of the greater word Smart, which in America means clever in every sense. Metaphorically you cannot spell Smart without Art nor fit a man to pass current in life in this age without culture. And so, thanking you for this opportunity which you have given me to express my admiration of your school, which adds yet another attraction to the very many of "Beautiful Brighton," as your city by the sea is properly called, I conclude.

At the close of his address, Mr. Leland was loudly applauded, as indeed he had been at many points during its delivery. He then proceeded to distribute the prizes to the successful students.

The report of the proceedings subsequent to the distribution of the prizes is here given; first, as showing the English custom on such occasions; and secondly, as showing the esteem in which Mr. Leland is held by his Brighton neighbors, and also as giving a glimpse of his varied acquisitions in other fields of study.

The compliment paid by Mr. Heathcote to Mr. Leland's mastery of English, furnished the text for some sneering paragraphs against American authors in the subsequent issue of the same journal on June 16, in which the sweeping assertion is made that America "has yet to produce her first great thinker," and has had no writer to compare with living or dead English authors!

As a typical instance of the occasional survival of individuals belonging to the Paleozoic period of English development, when the general contempt then felt for the whilom American colonists by the true Briton, was fearlessly outspoken, this assertion is well worthy of the days of Mrs. Trollope and Captain Basil Hall.

The leading article in the same paper upon the "Prize Distribution" is, however, very appreciative and complimentary to Mr. Leland, who, as perhaps the editor had forgotten, was himself one of the despised "American authors," elsewhere so contemptuously dismissed.

The following are the genial remarks by Mr. Heathcote, which drew forth the captious sneers of the paragraph writer:

At the conclusion of the distribution,

Mr. C. G. HEATHCOTE, who was received with applause, said that no doubt all of them were acquainted with the old proverb, "Duty first, and pleasure afterwards." He thought they had reversed that process that evening, because he thought they had put pleasure first, and now there was a duty devolving upon them, though he was bound to say that that duty was of a pleasant and gratifying character.

They had had the pleasure of listening to Mr. Leland's address — an address which he did not hesitate to say was one of a most masterly kind (applause), couched in language which he thought supported to a great extent the claim which was sometimes made by Americans, or on behalf of Americans. that they alone understood, or understood pre-eminently, the English language. Both in form and in substance it was an address from which he was quite certain they had received the greatest gratification, and from which they would carry away much both of pleasure and profit. That was one of the pleasures which they had received that night, but besides that there was the pleasure that so many of those he saw around him had participated in either personally or by proxy, namely, the receiving of prizes and rewards of merit, and intelligence, and industry which they had displayed during the past year.

Now there came a duty, though, as he had said, it was a duty which carried with it very much of pleasure, and that was to recognise by a vote of thanks the gratitude they felt towards Mr. Leland for coming there and addressing them as he had done. He had told them in the course of that address that he had lived long enough in Brighton to be almost naturalised as a Brighton citizen. He (the speaker) might say this, that he was sure that they would by acclamation naturalise him that night (applause); that they would by acclamation recognise the pleasure it gave them to add to the roll of wealthy citizens of Brighton (applause), that they would by acclamation testify to him that he must at once, and without any formality, take up the citizenship of Brighton, not delivered to him in gold boxes, nor paid for by fees, but earned by the service that he had rendered to them that night (applause), and ungrudgingly and with the greatest pleasure conferred upon him by an audience who had so attentively listened to him (applause). They knew by that time that Mr. Leland was an accomplished artist, that he was a man of science, that he was at home where literary men resorted, where scientific men resorted, or where artists were found, that he was essentially a many-sided man. He had shewn to them that evening that he was as much at home with students of art as he was with the most accomplished professors of art, but there was another side to his character, to which, if he was not afraid that the Chairman would rule that it was irrelevant, he would like to address their attention for a few moments.

MR. LELAND'S SPECIAL KNOWLEDGE OF THE GYPSIES.

Profitable, and instructive, and interesting as Mr. Leland's address had been, he was sure if he could only turn his attention to a field in which he was quite as much at home as he was in Science or Art they would be kept there until midnight. In the pursuit of that branch of knowledge, in the pursuit of that train of thought, he must have seen as much he thought of picturesque England as any dozen of them there. He would like him to tell them what he had seen in the way of picturesque character and scenery in the pursuit of a study which he did not share with other people, but which he had made absolutely his own.

He was more deeply acquainted with the gypsies, with gypsy lore and gypsy language, than any man now living (applause). He was not only *primus inter pares;* he had no *pares* at all. There were none like him. If he had thought fit to talk to them in the gypsy language he could not only have done so in one kind of gypsy language, he could have done it three times over in three separate gypsy languages, and he (the speaker) did not suppose they would understand a word of any of them (laughter). Therein he thought there would be some resemblance to some professors of art whom he had met, and heard discourse, for it had happened to him that after hearing discourses on Art he had wondered whether they were addressed to him in the gypsy language or what (laughter). That had not been the case that night. No doubt Mr. Leland's address was in some respects technical and no doubt it applied more to certain forms of Art taught in the Brighton School than to some other, but nevertheless it was perfectly intelligible, and he thought inculcated principles which were as valuable in all branches of Art as they were in that to which he was particularly referring.

IMPORTANCE OF A KNOWLEDGE OF DRAWING.

Design, accuracy, and form were just as important in all the branches of Art and of Science as they were in the particular branch to which he was specially alluding, and that was a thing they could not remember too well. The whole science of their teaching now, as contra-distinguished to what it was some time ago, was that they attached much more importance to form-design and accuracy. They did not try to make great colourists with a wave of the hand. If they did they would fail. The greatest colourists were born, but good colourists could be made and good draughtsmen could be made, though again the greatest draughtsmen were born. He was not going really into the question of Art that evening, because their time was short, and they had heard perhaps, enough, but that was the maxim which he thought underlay the application of Mr. Leland's address to those who were practising a branch of Art which was only distantly alluded to. Well, he would not take up any more of their time (hear, hear, and laughter). They were welcoming there a distinguished native of England beyond the sea (applause). They had heard his address, and it only remained to thank him for it. He was sure their thanks to him would be cordially and enthusiastically expressed (loud cheers).

The CHAIRMAN said the motion would be seconded by one of the greatest friends of education in Brighton, Mr. Daniel Hack (applause).

Mr. DANIEL HACK said it was not necessary, after the excellent speech of Mr. Heathcote, to say much in seconding the vote of thanks to Mr. Leland. He thought from what they had heard they would understand that he had a full acquaintance with Art and the principles of Art, but it might not be in the knowledge of some of those present that he was doing almost as much as any man in England at the present time, as he had done some years ago in America, to popularise Art, and bring it, in an ornamental and useful and valuable form, into the houses of the people (applause). For this he, and he knew all of them, thanked him, for it was just in the direction in which they were beginning to move themselves, and they might hail him as a resident in the town for many reasons, one because it was a great honour to have such a distinguished man there, and again because he had proved, by coming there so kindly, that he was willing, not only to reside, but to help forward the work that was going on in Brighton (applause). For this their thanks were doubly due to him. He always felt when he met with such a man, and found he was willing to be useful, that their thanks went forward as—it was Disraeli's definition—as a lively sense of favours to come (laughter), and he hoped it would not be the last time they would have his help and assistance in that and kindred institutions in Brighton (applause).

The motion having been put and carried unanimously,

Mr. LELAND rose to acknowledge the compliment, and was again loudly applauded. He remarked that he need not say he was deeply gratified by what Mr. Heathcote and Mr. Hack had said. He was gratified and deeply touched by what he had heard, for he did not anticipate anything of the kind. He came to quietly read his address, and expected nothing more, and he was overwhelmed.

Mr. Leland continued at some length, stating that much of his study of the Gypsies had been made in Brighton and vicinity, during the sixteen years since he had first begun his investigations. He closed by saying that now—

Education occupied a prominent position, and was coming more to the front every day. The labours of the Education Commission in London had lifted it wonderfully in one single year, and if there was anything that he had done in his life that he had to be thankful for it was that he had worked hard in the cause in which they were all interested (applause).

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IV.

HOW TO BECOME A GOOD MECHANIC.

As most of the literature accessible, relating to industrial education, has been written by educators, I have read with much interest a little book entitled "How to become a good Mechanic," etc., by an old apprentice,* both for its sensible and practical suggestions for self-teaching, and for the opportunity it affords for seeing what kind of training a practical mechanic thinks most desirable for mechanics. The following extracts are suggestive, and of interest as bearing upon the feasibility of some preparatory industrial training in connection with the public schools, and for their approval of some such provision as is met by the Manual Training School of Baltimore, for example. The element of time which he emphasizes as a most essential factor in the development both of mind and muscle, is one that, in many discussions of these topics, seems to be commonly overlooked:

INDUSTRIAL EDUCATION IN COMMON SCHOOLS.

A great deal has been said about introducing a mechanical education into our common schools. By mechanical education, however, is generally meant the art of Designing—a subject which really affects but a small portion of our industrial pursuits, and for which but a small number of persons are fitted. To *mix* such subjects with our common school studies, would be to spoil both; but to engraft a provision for a good technical education upon our common school system, would answer the purpose completely.

SPECIAL SCHOOLS DESIRABLE.

This education should be given in separate schools, for the simple reason that all the pupils are not intended for mechanics, and many of them are not fitted to profit by the subjects which form a proper study for mechanics.

These schools should be open in the evenings, and the classes should be taught by the best teachers that can be had. They would afford young mechanics the same opportunities that the children of the wealthier classes receive at the public expense in our High Schools, and it is but justice to the working men that they should get their share of the public educational funds. But, as a model for these schools, we hope to see ere long a school of arts established by private munificence in some of our manufacturing towns. Who will be the first to lead in the good work?

SPECIAL TRAINING LONG SINCE SUGGESTED BY COMBE.

It did not require any very keen powers of observation to see that the old apprenticeship system involved a great waste of time, and it was long ago suggested that a much better plan would be to teach young men a trade in a thorough and scientific manner, just as they are taught to read and write. Combe, the author of "The

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* "How to become a good Mechanic. Intended as a practical guide to self-taught Men; Telling what to study, etc., etc., by an old apprentice. Price 15 cents. New York. The Industrial Publication Co. 1883. Pp. 45. Copyright secured, 1883, by John Phin."

Constitution of Man," was a strong advocate of this system, and since his time it has been frequently urged by so-called reformers. When carried to an extreme, however, the system proves a failure, because it leaves out of consideration one of the most important elements of success — time.

TIME A MOST IMPORTANT ELEMENT IN EDUCATION.

It takes time for the untrained muscles to acquire the power of guiding tools properly, and all the knowledge in the world will not make up for this. Therefore, any attempt at reducing the time required to learn a handicraft, to the mere time required to impart a knowledge of that handicraft, will prove a failure. Even knowledge itself cannot be communicated without ample time. In one of his works, Combe says that it requires only about fifty hours to listen to a course of lectures on chemistry, and that, therefore, any intelligent person ought to be able to acquire a knowledge of the science of chemistry in that time. Every practical teacher knows the absurdity of such a statement. A proof-reader will read a large work on chemistry in less than fifty hours, but he is not a chemist when he gets through. Mental food resembles material food in this, that time is required to digest and assimilate, as well as to eat it. And to a still greater extent is this true of such acquirements as skilled handicrafts. They cannot be taught in a few hours; months and years of practice must be endured before efficiency can be attained.

THE OPPOSITION OF TRADES UNIONS TO APPRENTICES CONDEMNED.

We feel confident, therefore, that the apprenticeship system will always prove the most efficient in turning out good mechanics, and it is greatly to be regretted that the Trades Unions have taken the selfish stand they have in preventing any young man from acquiring a trade by this means. Such conduct is not only selfish and mean, but criminal, for it tends to manufacture criminals, it being notorious that the ranks of criminals are chiefly recruited from those who have no trades. But we warn them that other means will be found to give our young men a sound mechanical training, and as these young men will be brought up with a stern hatred of the unions, it will only be a question of time when the latter will be overpowered and their members held in contempt, if they pursue the criminally selfish policy which at present characterizes them.

TECHNICAL TRAINING ESSENTIAL TO ALL GOOD MECHANICS.

But while knowledge alone will not make a good mechanic, it is very certain that no man can become a really good mechanic until he has learned a good deal more than is taught in our common schools. The first thing, therefore, that a young man who seeks advancement must do, is to acquire this advanced knowledge.

WHAT SHALL I STUDY?—"What shall I study?" and "How shall I begin?" are the great questions which present themselves to the minds of young mechanics who desire to advance themselves in life. If a young man wishing to fit himself for the battle of life applies to one of what are called the well-educated classes, he will be given a long string of studies, prominent among which will be moral philosophy, history, geography, etc., etc. If he adopts this advice his time will be frittered away in useless effort, and he will never have that overpowering mastery of any one subject which can only come from concentrated effort directed to a single study. Moreover, these studies, the ones upon which our civil service examinations are chiefly founded, are of very little use either in practical life or as a means of mental discipline. The refined subtleties of moral philosophy rarely serve to guide men in a straightforward path. They are the favorite studies of our defaulters and embezzlers, while the highest authority gives us the whole moral law in three lines, which any intelligent child can remember. As for history: What difference does it make to the ordinary man whether it was Brutus that killed Cæsar, or Cæsar Brutus? The learning of such facts as these adds nothing to the power of any human mind. The history of great works, like the Pyramids, the Erie Canal, the Atlantic Cable, and similar undertakings, would be of great value if we could get them; but where can we find them in the ordinary range of literature? Historians delight rather to record with minute detail the degrading and disgusting episodes in the history of humanity.

PRACTICAL SUGGESTIONS ABOUT LEARNING GEOGRAPHY.

Geography is well enough to a small extent, but unfortunately it is usually placed at the wrong end of most courses of study. To young men who have a fair knowledge of geometry and natural philosophy, and who are familiar with the outlines of chemistry, the study of the principles of geography is a light task — as easy as reading a novel. But to remember the mere names and locations of the prominent places on the globe is a different thing. This is a matter of simple memory, and on most minds such isolated facts take but a very slight hold, so that the labor spent in committing to memory two or three thousand names is in reality thrown away. Unless the student is a post-office clerk or the mailing clerk in some large house such knowledge is practically of no use, and will be forgotten in six months. And yet, the same amount of mental effort applied to some more useful study, such as chemistry, would not only serve to give strength to the mind and scope to its ideas, but it would open up to the student a new range of thought, new views of the world in which he lives, and would place within his reach new facts, all of which are susceptible of practical application, the results of which might be of incalculable benefit to humanity. What use could be made of the fact that Lockport is west of Brockport, except by a railroad man or post-office clerk? The traveller will get it from his time-table, and if it be true, as has been asserted, that the human mind is capable of retaining only about 30,000 to 40,000 names, to the ordinary mind such a knowledge is an encumbrance rather than a benefit.

THE KNOWLEDGE ESSENTIAL TO MECHANICS CLASSIFIED.

The knowledge which the mechanic requires may be classified as follows, and as this arrangement helps to give clearer ideas of what the student should do, we shall give it in detail. His object is to acquire a knowledge of the properties of the materials which he is expected to use and mould into form, and also a knowledge of these forms — the latter, however, coming first in the course of study.

MATHEMATICS.

The first idea which we entertain in regard to any object is one of mere size and form; or, as the mathematicians say, *quantity.* Mathematics, therefore, lie at the foundation of all science, and should be taken up first. With one branch of mathematics—the science of numbers, or arithmetic—the student is already familiar; but, as we shall hereafter show, he should extend his knowledge greatly beyond the elementary rules taught in common schools.

The first department of mathematics that demands attention is plane geometry — the science of lines and surfaces. Upon this depends our knowledge of drawing, of surveying, and indeed of most elementary measurements, and, if we include trigonometry (which is merely a sub-division of plane geometry), this branch carries us over most of the available ground this side of spherical trigonometry, solid geometry, and algebra and their applications.

Solid geometry goes a step higher, and while lines have mere length, and while surfaces have only length and breadths, solids have a third dimension added, which, of course, increases the intricacy of the subject.

Distinct from geometry, as involving a slightly different mode of thought, is algebra. Algebra is the bug-bear of most young mechanics, who shun its cabalistic hieroglyphics as if they were the implements of necromancy. But algebra is an absolutely essential factor in any sound course of study, as it enables us to arrive at general laws and rules in cases where we would otherwise have a knowledge of mere isolated facts. Algebra, when applied to geometry and trigonometry, enables us to secure general results which could only otherwise be obtained with great difficulty; and when we apdly our preceping knowledge to the more difficult branches of mechanics, we are forced to call to our aid the differential and integral calculus.

"PHYSICS" OR "NATURAL PHILOSOPHY."

But besides mere quantity, matter has other properties, such as weight, color, hardness, etc., and upon these depend certain phenomena, which, when properly classified and their laws ascertained, give rise to the science of physics or natural philosophy, as it is more commonly called.

Natural philosophy divides itself into several branches, such as Mechanics, or the relation of motion, and pressure to mass; Hydrostatics and Hydraulics, which tell us of the properties of the air; Electricity, Magnetism, Light, etc., which tell us of special forces known by these names.

CHEMISTRY.

But after we have fully examined the properties of quantity, weight, color, hardness, etc., we find that they do not fully explain many of the phenomena which daily come under our observation. We find that iron rusts, wood rots, and stones crumble and decay, and after these processes have gone on for some time we find no visible trace of the iron, wood, or stone which was originally present. Each has apparently changed into something entirely different from the original substance, and on examination we find that bulk, color, and all other properties have changed, too. When these changes are investigated they reveal new facts and principles, which, when classified and arranged, give us the science of Chemistry.

BIOLOGY.

These three branches of science, then, are the key to all our knowledge of the physical world around us, until we reach that higher department where *life* comes into play, and the organic sciences of Botany and Zoology with their subdivisions of anatomy, physiology, etc., are developed. But even these cannot be well understood without a knowledge of Mathematics, Natural Philosophy, and Chemistry.

Our readers may feel surprised that we have left out, without so much as mention, such sciences as astronomy, geography, etc. But astronomy is merely mathematics and physics applied to the heavenly bodies; geography, in so far as it is a science, is the application of mathematics, natural philosophy, and chemistry, to a knowledge of the surface of the earth. So far as mere location of places is concerned, geography cannot be called a science, many of them being located by mere accident of purchase, possession, etc. * * *.

METHODS OF STUDY.

HOW SHALL I STUDY?—We feel very certain that one of the defects of our present school system is the multiplication of studies. It is not uncommon to find children of 12 to 14 carrying on seven or eight studies at once, the consequence of which is that their attention is divided and their minds enfeebled instead of being strengthened. Instead of taking eight studies abreast it were better to drive them tandem; in other words, if three years be devoted to a course of study let the studies so follow each other that there will never be more than two or three in the student's hands at once. Let him concentrate on these while they are in hand, and by regular and judicious reviewing see that he does not forget what he has previously learned. This rule, which is exemplified and confirmed in all our large schools, both by its observance in the most successful establishments and the evil results which follow when it is violated, gives a good hint to the self-taught student who wishes to achieve success. Such a student may have to labor during the day and his time is probably very limited. This being the case let him devote a certain number of hours to study, and faithfully adhere to them. Two hours will probably be as much as he can spare—probably only one or one-and-a-half. Let this be devoted to not more than two studies at a time and let the entire course be mapped out at the start. An hour and a half or two hours during two or three years, faithfully devoted to a judicious selection of studies, will place the student in possession of more practically useful knowledge than is possessed by half the college graduates who enter upon business life.

It is wonderful what intelligent, even though unaided, efforts will accomplish. A famous scientific man who acquired a wide and thorough education by studying alone in moments snatched from more pressing cares, said that he knew of no branch of knowledge which was not within the reach of any one who had perseverance and a knowledge of the twenty-four letters of the alphabet. Armed with this very elementary preparation he himself acquired a knowledge of mathematics and physics. Finding that there were valuable books in other languages which it was necessary that he should read, he set to work and acquired these languages so that he could read and study their books. We do not expect such success on the part of all our readers, for men differ in ability, but energy and perseverance will always produce wonderful results—genius or no genius.

In this country of common schools we may fairly assume that our readers know something more than the alphabet. We shall take it for granted that the student has a fair knowledge of the three elementary studies—reading, writing and arithmetic.

The importance of suitable preparation in these elementary studies is very great. All high schools and colleges make their students pass through a thorough examination before they are admitted and the young mechanic should be as severe with himself as any board of examiners would be. He should have such a knowledge of English grammar as will enable him to be moderately certain of the meaning of any properly expressed sentence, and he should also be able to express himself on paper in such a way that there can be no doubt as to his meaning. Indeed this part of a mechanic's education is quite as important as any other, for, whether he be in business for himself or conducting the business of others, it is absolutely necessary that all contracts and descriptions be plainly expressed on the one hand and clearly understood on the other, or endless trouble will be the result. That he should be able to write plainly and rapidly needs no argument, and his knowledge of arithmetic should include a fair acquaintance with vulgar and decimal fractions. The commercial portion of arithmetic—such as percentages, interest, etc., may be safely omitted for the present, for they have no relation to the fundamental principles of arithmetic proper, and are mere special applications of the general principles. They will give no aid to the young mechanic in his other studies, and will themselves be far more easily understood at a more advanced stage of the course. Fractions—both vulgar and decimal—are of the utmost importance, but will probably prove puzzling subjects until the student has mastered the first elements of algebra, when everything will become plain.

It is not sufficient that the student should be able to "work" the various rules by rote as it were; he must not rest satisfied with anything short of a clear understanding of the how, and the why, of every step; and this he will best obtain by the application of good sound practical common sense and the use of actual examples in which the numbers are represented by things.

V.

NDUSTRIAL EDUCATION AND TRADE SCHOOLS IN SWITZERLAND.

By Hon. BOYD WINCHESTER.

The following description of the Technical and Industrial Education of the Swiss is taken from the very interesting report on this subject, n which their Trade Schools are described, made by the Hon. Boyd Winchester, U. S. Minister to Switzerland, to the Hon. Thomas F. Bayard, U. S. Secretary of State, dated "Legation of the United States, Berne, February 26, 1887:"

This question has received much intelligent consideration in Switzerland, and under the Constitution, the Confederation is authorized to establish and maintain ndustrial and trade schools. The Polytechnicum or Technical University at Zurich, a government institution, where instruction is given in applied mechanics, physics, and art, embracing a general and thorough scientific *curriculum*, is well known, and has been frequently presented to the public as a model school of practical life. But trade and industrial schools as distinguished from polytechnic, genuine establishments for teaching homely trades, are being made a conspicuous as well as compulsory feature of the Swiss public educational system. They are to be found in every Canton furnishing instruction in numerous branches of handiwork—the boys preferring to become skilled workmen, and foremen, and many a girl, though an indifferent scholar, by being taught cutting and thorough needlework, cooking and cleanliness, and methodical habits, that bear so much upon the happiness and existence of the home, is prepared to prove a good, happy, useful, sensible wife and mother. Some Cantons with a population not exceeding 300,000 are reported as having as many as one hundred of these schools with over 3,000 pupils.

TRADE SCHOOLS HAVE BEEN LONG ESTABLISHED.

Trade schools in Switzerland are of ancient origin, having an intimate connection with the great impulse which the watch industry of French Switzerland received in the latter half of last century.

In the year 1770, a journeyman watchmaker, named Louis Faegare, applied to Prof. Saussure for some information connected with his trade, which the means of ordinary public instruction did not afford to his class. The Professor readily complied, and the result was a series of lectures or rather *conversaziones* held in the great scientist's own drawing-room. The audience soon increasing, a suitable locality was rented and a sort of club formed under the title of *Sociéte des arts de Genéve.*

THE WATCHMAKERS' SCHOOL.

This club, so modest in its beginnings, has survived all the mighty political tempests of a troubled age, the violent annexation of the Génevése Republic to France, and its restoration to the Helvetic Union, and to-day it occupies a high rank among earned societies, and numbers among its honorary members and associates many of the foremost names in modern science. This is the parent of the celebrated Watchmaker's School at Geneva, with branches at Chaux-de-fonds, Bienne, Neuchatel, and Soleure. Pupils are received in these schools when they are passed their 4th year, and must remain from three to four and a half years. For the proper artistic education there is provided a special technical school at Chaux-de-fonds, devoted to the art of decorating, which now constitutes a very important feature of he watch industry.

STRAW-PLAITING SCHOOLS.

More humble in their first stages, but scarcely inferior as to practical results, are the Swiss straw-plaiting schools, which have succeeded in developing a veritable new industry, commanding markets in the utmost corners of the earth. Some of the poorest portions of the subalpine districts have become well-to-do and flourishing, and it is said at least one little hamlet which was not to be found in the guidebook a few years ago, is now, from this trade, a thrifty town of some 10,000 inhabitants. The higher instruction in this particular branch extends to the cultivation and acclimatization of various kinds of foreign grasses, furnishing from the coarsest to the finest qualities of straw. In Zurich there is a Dress-makers' Institute which annually "graduates" some 30 or 40 qualified *Parisian* mistresses and assistant mistresses.

WOOD-CARVING SCHOOLS.

But to turn to trades which either by law or immemorial usage are assumed to require some years' apprenticeship. First in order of importance comes *Wood-carving*, a Swiss product that enjoys a world wide reputation, and has long been a source of no small part of the country's revenue.

These schools for wood-carvers seem to have a fully organized faculty. The word Faculty is used advisedly, for the courses have an almost amusing resemblance to an academic course. There are lectures with manipulatory demonstrations in the use of the plane, saw, lathe, and all needed tools, and also in the distinctive characteristics of various woods. A school for ornamental work and designs in wood-carving is at Breeng, supported by the communes and Canton jointly, and at Interlaken the wood-workers enjoy the services of a "master-modeler," paid by the Canton. Then there are schools for the study of wood-engraving, sculpture, and art cabinet-making.

SHOEMAKERS' SCHOOL.

There is at Winterthur a Shoemakers' School, with an average attendance of 40- and it has a peripatetic staff of instructors. These instructors give lessons at various towns, where classes can be organized, continuing from 4 to 6 weeks. This school also issues publications relating to their trade, one of the latest being on the structure of the human foot, and the technical reasons of the Swiss military authorities for the new regulations concerning the contracts for boots and shoes for the army.

Other handicrafts have followed the example set by the shoemakers, notably joiners, cabinet-makers, silk-weavers, basket-makers, jewellers, even to umbrellas and parasols, each having its cheap training schools.

DRAWING A REQUIRED STUDY.

Drawing, industrial, as distinguished from artistic, is taught in all the Swiss schools, not as an accomplishment, but is considered a necessity. It embraces mechanical and perspective, frequently extending to a course of construction and designing. * * * As an essential part of popular education, its claim is universally recognized in all of the Swiss schools.

SCIENTIFIC AGRICULTURE.

The Agricultural and Forestry department of the Federal Polytechnic Institute, in its "technology" as signifying science applied to industrial arts, has advanced those interests to positions that otherwise could never have been attained. Switzerland in physical respects is not a bountiful mother-land, neither the climate nor soil is good for agriculture, yet it is surprising what good results are obtained by the general diffusion among the agricultural class of much technical knowledge. With them the cultivation of the land *ex necessitate rei* could not be a simple routine, but a science. Mere practical farming would not return the labor and expense expended, but as an intelligent, educated industry, it has become quite prosperous and profitable.

The agricultural course in the Polytechnic is therefore looked upon as one of its most important, and the course is very thorough and comprehensive as to the Swiss conditions, covering the mechanical and chemical composition of the soil, the scientific basis as to rotation of crops, the periods of growth at which plants take their nitrogen, how draining improves land, and many other similar questions varied in their applications, but ruled by fixed laws, and which can be learned only by some technical instruction outside the daily routine of farm life. Take even the single question of "grasses," in which Switzerland is so much concerned on account of its extensive dairy interest, and the technical information scattered through the influence of the Polytechnic has been of incalculable value.

It would be incredible to an American farmer, to whom nature is so prodigal, to see the extent and varied use made of the grass crop of the Swiss. To do this, however, he must know something of the chemical analysis of the grass in both the natural and dried state, the feeding values of like weights of the different species, in an equally moist or dry condition, at the final stage of growth which they ought to be allowed to attain; their suitability for permanent or other pastures. The adaptability of some kinds of grasses for certain soils, the amount of growth attained, the time of maturity, their duration, ability to resist drought, strength to overpower weeds, and other circumstances that must be taken into account. Then there are questions relating to the extension of pastures, the drainage of grass land, cultural preparations, the selection of grasses, laying down pastures, the management of old and new grass lands, hay-making, grazing, ensilage, and temporary pastures, are all subjects on which the Swiss farmer is enlightened and kept abreast with the most advanced ideas. It may be added that for the benefit of the same class in a great measure, are the weekly lectures given at the Polytechnic on the subject of "pisciculture."

The expenses of the distinctively industrial schools, not including the Polytechnic, for the year 1885, were 522,425 francs, paid by the Cantons, and 152,041 by the Confederation, a total of 674,466 francs—the chief appropriation of the Confederation is to the Polytechnic, which it entirely sustains.

SWISS EDUCATION.

From what has been said in this report, and a previous one on the "Public Schools and Education in Switzerland," it must be conceded that the country enjoys a system of education aptly described by the Educational Commissioner of France, as existing in that country—"at once enlarged and simplified, instructive and attractive, for it does not omit even music and singing; healthiest, for it takes care of the body as well as the mind, and includes gymnastic and manual exercises; more practical, for it teaches drawing, which is the key of all industrial and mechanical professions; and more moral and patriotic because it is founded on love of country."

To this might be supplemented a summary of the special benefits of the technical and industrial training so conspicuous in the Swiss system.

It tends in addition to imparting dexterity of hand, no less to develop the child physically, mentally and morally.

It encourages a love of work in the children.
It inspires respect for the rougher kind of work.
It cultivates spontaneous activity.
It habituates to order, accuracy, cleanliness and neatness.
It accustoms to attention, industry, and perseverance.
It develops the physical strength.
It acts as a counterpoise to too much sitting.
It trains the eye, and cultivates the sense of form.
It leads the child to the conception of harmony and beauty.
It stimulates a love for intellectual honesty.

The following abstract of a treatise on "Industrial Instruction," written by a Swiss educator, recently published and lately translated into English and issued in this country, is inserted in this volume because of its general bearing on the questions at issue, while, as it is especially directed to the discussion in Switzerland, it seems naturally to follow the exposition of the Swiss system, as given in the pages immediately preceding, by the Hon. Boyd Winchester, at present U. S. Minister to the Sister Republic:

VI.

INDUSTRIAL INSTRUCTION DISCUSSED BY A SWISS EDUCATOR.

By the publication of a translation of a recent work on "Industrial Instruction," by Robert Seidel, a Swiss teacher,* an interesting and somewhat important addition is made to the scanty literature upon these topics accessible to American educators.

In connection with the many reports of the addresses and discussions upon these subjects by American and foreign authorities, so freely given in these appendices, some quotations from this little work seem desirable, as it is a serious and thoughtful consideration of the questions that arise in connection with this discussion by a practical teacher and by a thinker who, in his European home, is more directly confronted with the menacing problems that begin already to alarm far-sighted observers in these United States.

To those interested in following this movement this little volume by Herr Seidel will be found well worth their study.

Herr Seidel, who is evidently a "socialist," using the term in its better sense as opposed to "nihilist," begins with the philosophical proposition that the system of education adopted by any people stands in the closest relation to their social and political conditions; indeed, is directly evolved from them. He succinctly traces this proposition through the classic and mediæval eras, when class education was the distinctive feature, and asks:

> Is it not true that between the factory hand and the educated man of to-day almost as great a gap exists as between the slave and the philosopher of ancient Greece? How much of literature, art, and science does the mass of our people understand? Who reads our classics? Who appreciates our art treasures? Who comprehends anything of the enormous acquisitions of modern science?
>
> Every one who knows the circumstances can answer the question only with deep sorrow and confusion.
>
> So long as such gaps yawn between the members of a nation, the demand for general education appears to us, and to many thousand others as well, to be no mere phrase, though a thorough schoolman may find it too indefinite.
>
> In the face of the fact that it is still possible to set people against each other like wild hordes, it can be no mere indefinite phrase. If general education were achieved, this would be simply impossible.
>
> Indeed, we should be careful of speaking slightingly of general education, for the reason that our noblest and best men have struggled and suffered for it.
>
> ### INTELLIGENCE AND FREEDOM ARE CLOSE ALLIES.
>
> The fact that the *promulgation of human development* goes hand in hand with the *promulgation of human rights*, proves the close connection between great education theories and social revolutions. About the time of great social transformations, great educators always make their appearance. Hence, each form of society begets its form of education, and each stage of the economic development of mankind implies a definite system of education and instruction.

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* Industrial Instruction: A pedagogic and social necessity, together with a critique upon objections advanced, by Robert Seidel, Mollis, Switzerland. Translated by Margaret K. Smith, State Normal School, Oswego, N. Y. Boston: Published by D. C. Heath & Co., 1887. Pp. 160.

We no more have a constant, unchanging pedagogy than we have an unchanging form of society; both are in a state of continual movement and continual development. Now, in the matter of social development, what is our position to-day? Whoever has capacity to understand and interpret the sighing and groaning in the rushing loom of time, knows that a mighty social revolution is in the near future. The present economic form of capital, private production, free competition, and profit of men by men, has expired; it has become an anachronism, and must go the way of slavery and feudalism. We already find ourselves in a transition state, ready for new economic forms, for common interests, intelligent co-operation, and assistance of all for all.

MANUAL TRAINING A NEW PRINCIPLE IN EDUCATION.

In proportion to the realization of this new social form will a new system of education and instruction make its way. The new element in this system will be the principle of hand labor. The principle of socialism, to make co-operative profitable labor the ground work of social and political life, demands recognition and realization in the educational department. We do not consider industrial instruction to be merely occupation for otherwise idle boys, still less an opening of new sources of profit or income for poor parents, or the improvement of handicrafts; but the introduction of a new principle, that of labor, into public instruction, exactly as the Rousseau-Pestalozzian movement was considered with regard to the principle of natural development and observation.

We are neither afraid nor ashamed to assume the prophet's role, and to predict:—So surely as with civil society the ideas of the culture of mankind, natural development, and observation make their way into the pedagogy of the time, so surely with the new order of society will its principle, labor, achieve its citizenship in the system of education. Struggling against it is vain. The future in the state, as well as in pedagogy, belongs to labor.

We should not be guided to false conclusions by the historical evidence that, during the last hundred years, industrial instruction has several times vainly demanded admission into general education. Whoever, on the plea of its worthlessness, would exclude this branch of study, together with its method, or would be misled into the belief that industrial instruction will never be admitted into the plan of public education, would only exhibit a very unflattering evidence of his own historical knowledge and judgment. Objective instruction was obliged to wait nearly two hundred years for general recognition and adoption, yet to-day no one will question its value. Sometimes the good triumphs late, also sometimes not at all. Success is a standard not to be employed by critics.

M. JULES FERRY ON HAND LABOR IN EDUCATION.

As a sign of the times, we quote a selection from the discourse of M. Jules Ferry late French Minister of Public Instruction, upon the occasion of the laying of the corner-stone of the school for primary, superior, and professional instruction (at Paris). He spoke as follows:

"We desire to ennoble hand labor. We have written this motto in large letters upon our programme, and we have chosen the surest, indeed the only means of securing the recognition of the nobility of hand labor, not only from those who exercise it, but also from society as a whole. We have introduced hand labor into the school itself!

"Believe me, when the plane and file are accorded their place of honor by the side of the compass, the map, and the text-book in history, and when they become the objects of rational and sytematic instruction, only then will a great amount of prejudice die out, and much of the spirit of caste vanish away. Social peace will find a place upon the seats of the elementary school; and harmony, with her beaming light, will illuminate the future of the nation!"

Truly, if this has been declared by the leader of public instruction for a great nation, and if, as we see to-day in France, the word has become flesh, then this matter cannot be arrested by a few apt phrases of schoolmen, but with or without the mediation of official pedagogy, must make its way through the educated world.

In succeeding chapters our author takes up, seriatim, the arguments of the opponents of the proposed new instruction. He sees clearly that many of the economic conditions which embarrass the present generation result from the fact that, in accordance with the irresistible tendency of the age, manufactures and agriculture are rapidly coming under this control of combined capital, and that there is, in consequence, less and less opportunity for the profitable industry of small manufacturers and farmers; therefore he concludes that the arguments for handwork, *as an economic method, are fallacious*, and that industrial instruction in schools is to be urged chiefly on account of its pedagogic value.

> Industrial instruction is in no way opposed to general education, but is itself a means for securing the same. We are not dealing with home labor as a Utopian means for removing social calamity, but with the highest and deepest pedagogic questions.

Many of his arguments are urged against special propositions advanced by German and Swiss opponents of the new movement, and are not such as have been urged in this country.

Here is a very suggestive paragraph in relation to the educational value of labor:

> All labor is not educative; that only is so which is pursued pedagogically; that which is pursued mechanically is stupefying; and mechanical employments, even when pedagogically pursued, are of comparatively little educational value.

This may well be taken as a warning against the indiscriminate and thoughtless advocacy of any, and all forms of industrial training, as equally important in education.

From the division in Chapter V, urging the "disciplinary and educational value of drawing, industrial, and science instruction," are taken the following arguments for "constructive" drawing and for hand labor:

EDUCATIVE VALUE OF HAND LABOR CONTRASTED WITH THAT OF DRAWING.

The self-activity of the child is rightly represented as the most important educative momentum of instruction in drawing. Instruction in drawing which does not rise above spiritless copying is of no worth; that instruction by which the self-activity of the child is exercised is the best. Well, as little as any one has presumed to doubt the value of the self-activity of the pupil in drawing, just as little can one question the eminent importance of production in industrial instruction. If producing in drawing is educative, it must be as much so in hand labor. Indeed, hand labor must be more educative than drawing, because in it the self-activity is greater. In drawing, one must constantly deal with the mere form; in labor, one has to do with the form together with the material. In drawing, only two dimensions are considered; in labor, the three dimensions must be equally observed. Hence, the man who constructs an object receives indisputably livelier, clearer concepts of it than the one who merely draws, for he must much more accurately comprehend the form as well as the nature of the material. Apart from works of art, however, the material of every object is quite as important as the form, and often much more so.

Through the following considerations, the great educative power of hand labor as contrasted with drawing may be much more clearly perceived. In working, I must touch the material, analyze it, perhaps smell and taste it; in drawing, not: in working, I must learn the properties of the material; in drawing, not: in working, I must choose the tools, and also the manner of work, according to the material; in drawing, not: in working, I must, as a rule, exert myself physically; in drawing, not: in working, I must give great attention to the material; in drawing, very little: in short, in working, I must set many more senses and powers in activity than in drawing. Hence, the construction of objects implies much more knowledge and understanding, enriches the concepts in a much higher degree, and awakens and exercises many more powers and talents, than drawing.

Instruction in drawing trains the taste and the eye, says one. We admit that instruction in drawing, pedagogically pursued, secures the training of the taste and of the eye, but industrial instruction, pursued according to pedagogical principles, must secure this training in a much higher degree. In regard to the training of the eye, there is no doubt that by the construction of objects the eye must in every way be much more exercised than by drawing. The proofs of this lie in what has already been said. That industrial instruction must be calculated to train the eye and taste better than drawing can furthermore be shown in the fact that the ob-

> jects, according to the material used, show different natural colors and lustre, while drawing is silent upon these important qualities of objects. Drawing trains really only the taste for form. The construction of objects trains also the taste for color, and for the combination of color, form, and material. For artistic hand work, and for the artistic forms of life, taste in combination is most important. Taste can at all events be very much better trained with objects themselves than with drawings of objects. For this reason, we visit places of art and beauty, and shall visit them even when graphic art shall be much more highly developed than at present.
>
> Finally, and from an educational point this is most important, it cannot be denied that constructive embodiment of form in some material appeals to the nature of man, and especially of the child, much more than constructions on paper. Before men could sketch they could construct, *and before children touch the drawing-pencil they build and construct objects according to reality.*
>
> If we proceed according to nature, hand labor and modelling must be introduced into the school, and both should precede drawing. If one really intends to train the taste, eye, and hand, in the school, then hand labor is needed; if one wishes to bring the principle of self-activity in a most comprehensive manner into the school, so that it may be of worth, it can only be done by hand labor. If professional drawing in the school is to be attractive, then it must be followed by execution; if the child is to be satisfied by instruction, the most effective means for this purpose, hand labor, must not be excluded.

The following passages well illustrate how our philosophic author blends political and social topics with this educational question:

> But the man who has no conception of hand labor can have no self-acquired and correct concepts of the hand-laboring class of people [industrial population], and of the objects constructed by them. In consequence of these incomplete concepts, he despises labor and laboring people, and becomes prodigal and wasteful of labor products, just as all the ruling classes of ancient states, in consequence of the disuse of hand labor, notwithstanding moral precepts and philosophy, have, and according to psychological laws *must* have, become. The final result of this disuse of hand labor, with its consequences of prodigality, gluttony, and drunkenness, was the complete bankruptcy of society. In proportion as the disuse of hand labor increased, contempt of labor and laborers, prodigality, and drunkenness increased. It could not be otherwise. Men who are strangers in the whole world of concepts growing out of hand labor, and who are incapable of thinking, judging, arguing, and feeling, are dangerous to the well-being of a state, especially of one founded upon the labor and equal rights of all citizens.
>
> Now, if the common school does not make them acquainted with it, a number of citizens are at present growing up ignorant of hand labor. Generally, these are the citizens who will be educated and chosen for the guidance of the state. In view of this fact, can we wonder that labor is so little esteemed! Certainly not.
>
> Accordingly to what has been said, industrial instruction, from an educational as well as from a social, political stand-point, is a necessity. From an educational stand-point it is necessary, because hand labor secures knowledge and understanding, which cannot be secured by mere observation, but which for mental training and for life is, however, of the highest importance. From a social, political, and pedagogic stand-point, it is indispensable, because hand labor serves in the forming of concepts which, for the peaceable intercourse of humanity, for moral conduct, and for the existence of the state, are of the greatest significance.

This recalls a statement recently made to Hon. Chauncy M. Depew, when in Holland last summer, in which an intelligent citizen of that country accounted for a change of policy which had proved disastrous to their industrial interests on the ground that the industrial producing classes had no voice in directing the policy of the country, while the rulers made mistakes from lack of any experimental knowledge of the situation and needs of the producers—the very dangers that our author points out and seeks to remedy.

In the section entitled "School hand-labor and choice of a profession" occurs a note showing that in Germany, as well as in the United States, the percentage, of the whole population, who receive the highest education, is extremely small. As in the Assembly of the States General of France, called by Louis XVI, it was found that the "third estate" comprised 97 per cent. of all the people of France, and therefore, to the terror of the royal, noble, and priestly classes, the third estate declared itself to be the National Assembly; so, if they have the interests of the great body of the people at heart, it is upon the instruction of this immense majority of the pupils who are found only in the lower grade elementary schools, that educators and legislators must concentrate their attention and efforts.

The educated classes may mostly be trusted to look out for themselves to see that higher education does not perish from out the land, though, most fortunately, in many States of this Republic, this great duty is not left to the care of *any class;* but it is recognized as the duty of the State itself, thanks, largely, to Thomas Jefferson, the great founder of the University of Virginia.

The importance of the training to be given in our public schools to this great body of coming citizens can not be exaggerated. How shall the best service be rendered to the children who stay but the fewest years in school, is a far more pregnant question than whether manual training schools shall be given to boys who can stay in school till they are 18 years of age.

The passage referred to follows:

> In the end, a people does not live by literature, science, and art, but by labor; and the small per cent.* of us possessing middle and higher education can enjoy these beautiful things only because the hand labor of the great mass of the people makes it possible. Then, from a social, political stand-point, it could be more easily and with more valid reasons proved that the education provided by the state ought to consider hand-labor from the first, than it could be shown that from the first it must exclusively provide for mental training.

The introduction of industrial instruction in schools is also urged for the opportunities given for ascertaining the pupil's bent of mind, and for enabling boys dull in study of books to show superiority in mechanics, as often happens; with obvious good results in developing self respect and in equalizing the standing of the scholars among themselves. The question of who shall teach the new studies is then considered.

XI. THE DECLINE OF THE TEACHER'S POSITION.

The question, By whom shall industrial instruction be imparted? is by the majority of the opponents correctly answered. The teacher, and not hand laborers who are pedagogically untrained. In this respect they place the pedagogical standpoint at the head, but only in order to more effectively unite to it their lamentation over the decline of the teacher's position. Even now, they say, the time in the training school is not sufficient for the teacher to acquire the necessary education; but what will it be if he has to learn carpentry, lock-making, book-binding, turning, carving, etc.? In this case the teacher must degenerate into a mechanic.

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*According to Dr. Engel, Journal of the Imperial Prussian Bureau of Statistics, in 1871, the male population over ten years of age in the Prussian States were distributed in the different grades of education as they are ordinarily distinguished, as follows:

Classes.	Persons.	Per cent.
1. Highest Education	93,000	1.023
2. Middle Education	193,000	2.122
3. Elementary Education	7,885,423	86.703
4. Alphabet Education	933,274	10.152

Then, 3 and 4 together, equal 96 per cent. of the population possessing only elementary education, or none at all.

If the female population were reckoned, there would be a still lower ratio of higher and middle and a greater proportion of the lower. (See Starke, Privy Councilor of Justice, *Crime*, and Criminals in Prussia, from 1854–78.)

He will become a bungler, and the consciousness of professional dignity will be lost. What a frightful outlook for the teacher's position! Fortunately, it is too fanciful. Let us be calm! The learning of all trades in their full extent can and will not be necessary; but only the learning of the elements of a number of handicrafts, or rather, we shall say, of hand labor. The elements of all handicrafts, however, are as simple and as like each other as the elements of all sciences are simple and like each other.

Then follow a few statements in regard to the progress made by children in acquiring the new studies. Herr Seidel, in this, strikingly corroborates the statements of Mr. Lelaud, as to the readiness with which young children acquired some of the minor arts.

By a few hours' instruction, weekly, in the different departments of hand labor, it is astonishing to an impartial person what readiness children will in a short time acquire. We have no idea what rich treasures of practical capability lie hidden in our children, and what immense productive power we, to the injury of the children and of the nation, allow to be arrested and perverted to dead knowledge, infectious weariness, crippling precocity, and poisonous idleness. May we soon gain this knowledge.

Let us compare the quickness and ease with which children appropriate skill and practical knowledge with the slowness and difficulty with which they advance in mental capacity and theoretical knowledge. If we inquire after the cause of this slow progress in the last, and the quick advance in the first case, perhaps no other than the following ground of explanation can be discovered.

Child nature implies action rather than abstraction, meditation, and receiving; the child's interest and capabilities are greater for practical than for theoretical instruction; by the first he is better satisfied and incited than by the last.

Now, should not the quickness with which children advance in industrial instruction, and the pleasure with which they work, be a suggestion to educators regarding the excellence and naturalness of this instruction? And should not educators who make, or pretend to make, the nature of the child the ground-work of their educational principles and efforts, first of all turn their most earnest attention to this subject? We think so.

After fully indorsing the educational plans of Fröbel, and quoting from Rousseau and Pestalozzi, our author concludes by an affirmative resumé of the arguments in favor of the new Industrial Instruction as follows:

Industrial instruction is throughout not only a powerful means for the promotion of objective instruction; it is not only the best kind of objective instruction; it is not only an extension of objective instruction, as has already been said by its advocates; but it is more than all that, for it has:—

First. A great educational value.

Second. A significant mental and physical disciplining power.

Third. A deep reaching social and moralizing influence.

The great educational value of industrial instruction consists in:—

1. That it satisfies and cultivates the child's instinct for activity; that it nourishes this instinct and directs it towards the beautiful and the useful, and that by it the most important part of the child's nature will receive justice. * * *.

2. That it awakens a lively interest and pleasure in labor and its products, and enables the child by its own efforts to secure this interest and pleasure. The articles produced by the labor of the child, articles of real use, create in him a feeling of capability, awaken his self-confidence, and give him inner satisfaction. * * *.

3. That it, without artificial means, forces the child to concentration, attention, and perseverance. Whoever will accomplish anything by labor must concentrate himself, must be attentive and persevering, otherwise it will not succeed, and the mistakes are more easily manifested than in school work. Besides, he who is interested in a thing observes gladly, concentrates himself willingly, and perseveres without murmur.

4. That it nourishes thought and will, and directs it towards the good and the useful, and permits and teaches to transform both into the deed, which again warrants a high satisfaction and awakens dignity.

Thought needs a subject; the will needs an aim. If no attractive, permissible object be offered the thoughts, then they seize upon improper ones, and if no rational aim be set for the will, it chooses for itself an irrational and bad one. History and experience satisfactorily prove the correctness of what has been said. A worthy object of childish thought, however, is labor.

The significant educative power of industrial instruction lies in:—

1. That it awakens and trains the powers and talents which would otherwise remain dormant and untrained.

It is a fact that many talents, if at an early age they are not properly fostered, become arrested. Once arrested, it is very difficult for them to be called forth again, and still more so for them to be developed. The present school for study hardly awakens and trains the artistic talents at all. Thousands of talented persons and hundreds of artistic geniuses miss their destiny and are lost to humanity, and fail in their callings as well as in their lives. The history of many a disappointed life and even of many a criminal's life is nothing more than the tragical history of arrested artistic talent or genius. Oh! they are often heart-breaking, those histories! Shall the rich artistic powers always be lost for the beautifying of life? Shall thousands forever stagnate mentally because the point of Archimedes from which their mental life would have originated (we mean artistic interests) was not sufficiently fertilized?

2. That it sets in activity the greatest imaginable number of senses and powers, and secures knowledge and information which no other instruction can secure.

There are knowledge and undertsanding which can only be gained by labor, and it is an educational experience much too lightly valued that the minds of many children only rise by practical activity, and that the mind so aroused is of the stronger and more progressive kind. Only the original mind, however, is progressive; only the original mind can educate itself by self-activity.

3. That it first gives a foundation for much theoretical instruction, and places the aim intelligently before the children.

4. That it must serve as a test for much theoretical instruction and as sufficient reason for its necessity and practical utility,—at least for the understanding of the children. What appears to us established, necessary, and practical does not necessarily seem so to the child. If he is not educated to be a faithful echo, then the proofs for everything must be laid open before him. His mind as yet is too weak for theoretical proof, or he does not believe in it, or the theoretical proof is difficult to produce; then it must be practically performed.

5. That it secures knowledge and understanding much more easily, quickly, impressively, and hence more lastingly. That which is apprehended through many senses and powers gains admittance into the mind more quickly and easily, makes a greater and more lasting impression. That which has gone through the hand, foot, and head, so to speak, is only really our property.

6. That it teaches the child to value, observe, investigate, test, compare, and invent.

He who will construct an object, whether after a model or a drawing, must take careful account of the important relations of the three dimensions; the working material must be chosen and tested in regard to size, color, and quality; then the tools must be chosen and examined as to usefulness; and finally, in working, he must keep in mind the measure, and compare the form of the whole as well of the individual parts.

During the work, involuntary observations of the materials and tools will be made, and investigation and comparison will be employed; continually estimations, measurements, and verifications are necessary. During the work a crowd of contingencies and difficulties which compel observation, investigation, comparison, and invention, make their appearance.

7. That it exercises the senses, hands, and members, makes them skilful in practical activity, and keeps the body sound and fresh.

All that has been said of the educative value of industrial instruction applies also to its refining influence, for everything that educates also refines; as conversely, all culture educates, although to a much less degree. All education is discipline, but not all discipline is education; whether and to what degree culture is educative, depends materially upon the process of attaining it. * * *

Furthermore, the moralizing social influence of industrial instruction lies in:—

1. That it comprehends the whole man from the good side of his nature, and brings only his good powers into action.

2. That, in the most significant manner, it demands and exercises the self-activity of the worker. Self-activity, however, is the way to morality. Only action can train the character, and only in action can it become apparent. Also, only by action can morality come to light. A mere passive morality, which only avoids the bad, but does nothing good, is but the beginning of true morality. The great Florentine (Dante) places in the fore-court of hell those who have avoided the bad, but have not earnestly striven after the good.

3. That it places a barrier against idleness as against the beginning of all crimes.

* * *

4. That it teaches the child to know, love, and respect labor to appreciate cor-

rectly the value of labor products, and so to comprehend the social value of hand-laboring people.

He who has never performed hand labor does not know how to value it, its products, and the working class of people. The exchange or money value of a thing furnishes a poor standard by which to judge of the trouble of its manufacture, for it depends upon existing economic laws, and not upon the industry, capability, and trouble expended. The rich man seldom knows that to construct an article which he buys for one or two marks or francs, one must have given a long day's trouble, and have sweat or frozen and starved over it. Indeed, if everything could give the history of its construction, we should often shudder over human misery, and we should think and act humanely. It is a great misfortune for a state that the classes called to its guidance have seldom learned hand labor. If this were the case, we should have attained a true social reform and greater morality among the whole people. Our moral conduct depends materially upon our valuation of men and things.

5. That it leads the child to a recognition of its powers as well as to a recognition of their limits, and teaches him to value the powers of others as well as the people themselves.

Knowledge puffs up; labor, on the contrary, elevates, and at the same time preserves us from conceit, for only by *doing* do we become conscious of the limits of our knowledge and capability.

6. That it makes a proper choice of calling possible, for only by self-activity, and not by reception and reproduction, is the individuality of the pupil developed, and only self-activity teaches the pupil to know his powers and inclinations.

7. That it promotes the interest of the parents in the school, and compensates for the contrast between school and life.

Because for the majority of the people the school is so little an institution for preparation for life, are so many of the parents without interest in the school, and, indeed, unfriendly towards it. When the propertyless man goes out into life, his school knowledge as a rule is of very little use to him, and so he gains the idea that the school is of no use at all, or that it is really injurious. But if the school, by means of industrial instruction, prepares better for life, then the interest of the great mass of people will increase, and their antipathy disappear.

CONCLUSION.

We hope we have succeeded in proving the educational value of and the social necessity for industrial instruction. That, however, which has become necessary in the world, whether by progressive knowledge or by changed relations, does not admit of refusal, but like a power of nature breaks its way. Hence, the subject of industrial instruction, notwithstanding the antipathy and prejudice of capable school men, will make its way. We understand these men well. By offices and honors they are too much connected with the school, and also by trouble and struggle they have ever grown too old with the school to be able to enter upon new ways with satisfactory mental freshness. They yield to a law of nature, and remain behind. Their past will be for them the drag-chains of progress. We honor the labor of these men, as of all labor that has helped to build up the public school, but we do not consider it as complete and finished; we wish to continue it. We wish, above all things, to repair all neglect, to advance all that has been retarded, and to prepare a place for labor in the school. In doing this, we act according to the views, and in the spirit of our great educators, and fulfil the high aim of the public school—*to train the children to be mentally active, socially* useful, and morally good men.

Labor! thou that raiseth the humble, consolest the sad, guidest the erring into the path of virtue; thou comfort of the weak, salvation of the poor, and joy of the strong; thou help of the fallen, staff of the stumbling, and comfort of the good; thou image of the highest power that raisest us to a likeness to Divinity; thou that hast reared all mankind, and brought them out of barbarism; thou wilt exercise thy mighty disciplinary and educative power upon the plastic material of the rising generation, and through thee will be developed a more beautiful and better youth, that shall be a joy and a blessing to the world.

VII.

TECHNICAL EDUCATION IN NEW YORK.

Undoubted evidence of the increasing interest taken by the general public in all questions relating to industrial education is afforded by the space now given to these topics by the press.

The following extracts from a column article in the New York Tribune of April 3, 1887, are here quoted as confirming the statements made in this Report as to the difficulties which are put in the way of American youth who desire to learn a trade.

The article also briefly describes several of the schools to which reference is made. As accounts of these are given elsewhere in this Report, they are here omitted.

The article is headed "Training that is Helpful—Technical Education in this City."

> When an exhibition of the handiwork of trades schools was given in New York a year ago, and people were talking learnedly of the value and importance of industrial education, there was general inquiry as to what New York had been doing in this direction. In the exhibition there were displays of the work of other large cities, in comparison with which the exhibits of this town made a small showing. There were private schools of New York, however, that maintained its credit. They had been in existence quite as long as those of other places and had done fully as well. The exhibition had the result of arousing a wider interest in industrial schools.
>
> Mechanics themselves were among the first to see the importance of these reforms. In the last quarter of a century the trades have undergone great changes all over the country. Trades unions have become so thoroughly organized that they now control nearly every branch of labor. By their regulations only a specified number of apprentices are allowed to learn the trades. An employer cannot place his son in his own trade as an apprentice unless the rules of the union are complied with and the boy waits his turn. This control of apprentices tends to keep down the number of mechanics and to keep their wages up. In spite of all their efforts the trades unions have found that there is a large and rapid increase of skilled mechanics due to immigration. It was ascertained that every year a large number of mechanics came to the United States and generally to New York, where they remained for a few months or years, reaping the benefits of high wages and returning to their homes when the demand for labor diminished.
>
> The number of apprentices was so few that only a comparatively small number of boys could secure a chance while they were of the right age to learn a trade. They became clerks or even common laborers. It was found that other countries had taken advantage of American inventive genius.
>
> Technical schools had been established all over Europe which appropriated and taught the latest improvements in this country and elsewhere. Immigrants who landed in Castle Garden as skilled laborers knew American methods quite as well as American mechanics.
>
> Such information turned attention to the need of technical education in the United States. It began to be understood that the day for the old-time apprentice had passed away. Institutes for technical instruction were established in some manufacturing towns, and plumbers, carriage-makers, and other trades formed associations for the proper instruction of their helpers.
>
> Several of these organizations have been established for a number of years in New York.

The list of schools described includes the school, for their apprentices, of R. Hoe & Co., referred to in Part I of this Report; the free classes of Cooper Union, the workshop in the City College, the New York Trade Schools of Mr. Richard T. Auchmuty, the classes held by the Industrial Educational Association at No. 9 University Place, the Hebrew Technical School in its new buildings in Stuyvesant street, and the Art Schools of the Metropolitan Museum. The article ends with the following summary:

> In addition to these schools in which technical instruction is given there is also the Gramercy Park School, which includes a polytechnic course, and a technical school in Glass Hall, in Thirty-fourth-st., near Third ave. The Wilson Industrial School at Eighth-st. and Avenue A has sewing, cooking and housekeeping classes for several hundred girls from five to twelve years, whose parents live in the tenement houses of that neighborhood. The Children's Aid Society maintains an Italian school in Leonard-st., in which boys and girls under fourteen are taught. Further up-town the society has established a brush factory in which crippled boys are instructed to make brushes. Classes have also been organized and are taught in these practical studies in connection with several churches in the lower part of the city. Felix Adler's kindergarten and technical school have large classes; the Rev. R. Heber Newton has extended this work in his church, and on the East Side the Rev. D. C. Potter established technical classes several years ago, and the Baptist Tabernacle, of which he is pastor, expects to erect a large building this year for this purpose. Superintendent Jasper and his assistants are engaged on a report, after having inspected the technical schools of New York and its vicinity, with the view of introducing manual training in the public schools of New York. Last fall $35,000 was appropriated for this purpose and the Board of Education expects to prepare some plan for making a beginning during the present year.

APPENDIX L.

VARIOUS PHASES
OF
INDUSTRIAL EDUCATION
IN RELATION TO
THE PUBLIC SCHOOLS,
AS SET FORTH
By AMERICAN EDUCATORS
IN
PAPERS, ADDRESSES, DISCUSSIONS, AND CONFERENCES.

I. Introduction.

II. Extracts from reports of various addresses on Manual Training made in connection with the reception given to Professor Woodward, of St. Louis, in Boston in 1885.
  - (*a*) General Francis A. Walker, President Massachusetts Institute of Technology, introduces Professor Woodward to a Boston audience, December 16th, 1885.
  - (*b*) Professor Woodward's address on Manual Training.
  - (*c*) Report of speeches by eminent educators at Banquet given to Professor Woodward by Mr. John S. Clark, December 17th, 1885.

III. Report of Discussions concerning Industrial Education in the Common Schools held in Boston, Massachusetts, early in 1887.
  - (*a*) Report of session of Conference of Associated Charities January 20th, 1887.
  - (*b*) Address by Dr. John W. Dickinson, Secretary State Board of Education.
  - (*c*) A Plea for Industrial Education in Public Schools, by Francis A. Walker, read before this Conference Feb. 10th, 1887, in reply to Dr. Dickinson's address.
  - (*d*) Report of session of Feb. 10th, 1887. Address by Mr. Edward Atkinson in reply to Dr. Dickinson.

IV. "Manual Training Schools." A paper read by Superintendent Seaver, of Boston, before The Boston Trade Club, February 3rd, 1887.

V. "Manual Training in Public Schools." Extracts from an article by Professor Thomas Davidson, in "The Forum," April, 1887.

VI. Industrial Education as presented before the National Educational Association in Chicago, July, 1887.
  - (*a*) Address of welcome by Hon. Allan G. Story, President of the Chicago Board of Education.
  - (*b*) "Manual Education in Urban Communities," by General Francis A. Walker.
  - (*c*) "Kinds of schools to be introduced and practical methods of instruction" by Miss L. A. Fay, director of drawing in Schools of Springfield, Massachusetts.

Industrial Education at Chicago—Continued.

(*d*) "The Function of the Public Schools," by Professor C. M. Woodward of St. Louis.

(*e*) Discussion of the preceding papers participated in by many educators.

(*f*) Report of Sessions of the "Industrial Department." The discussions were participated in by a large number of educators.

(*g*) Report of the Educational Exposition.

VII. Industrial Education discussed by the Superintendent's meeting in Washington, D. C. February, 1888.

(*a*) How and to what extent can Manual Training be engrafted on our system of public schools? by Nicholas Murray Butler, PH. D.

(*b*) Discussion participated in by Superintendents Powell of Washington, D. C. and Marble of Worcester, Massachusetts; by Director H. H. Belfield of Chicago Manual Training School, by Mr. Charles H. Ham of Chicago, Illinois; by Hon. M. A. Newell, State Superintendent of Maryland, by Mr. Henry Randall Waite, of New York; by Superintendent Kennedy of San Francisco, California, by Dr. Jerome Allen of New York, and by Superintendent Anderson of Milwaukee, Wisconsin.

VIII. Industrial Education as presented before the National Educational Association in San Francisco, July, 1888.

IX. The Swedish Slöjd Instruction. A compilation by I. Edwards Clarke, from various authorized publications, showing the development of Slöjd; with an account of Dr. Otto Salomon, and the Schools of Nääs.

X. The Physiology of Manual Training. A lecture on "The Value of Instruction in Manual Dexterity as regards bodily development of hygiene," delivered before the Manual Training Association at Leipsic, by Dr. Birch-Hirschfelder, Professor in the University at Leipsic.

XI. The Psychology of Manual Training. A paper read before the Department of Superintendence, National Educational Association, Washington, D. C. March 7th, 1889, by Professor Wm. T. Harris, LL. D.

XII. "Industrial Education as a part of the Common School Course" critically considered by A. P. Marble, Esq., Superintendent City Schools, of Worcester, Massachusetts, (1885.)

XIII. The new Educational Methods criticised by an experienced Educator. "Which Ideal"? by H. C. Missimer, Esq., Principal High School, Erie, Pennsylvania. ("The Academy," March, 1889.)

XIV. Report on "The Educational Value of Manual Training;" made by the Committee on Pedagogics to the National Council of Education, in session at Nashville, Tennessee, July 15th, 1889.

I.

INTRODUCTION.

The papers grouped in this Appendix relate wholly to topics included under the general term of Industrial Education, and mostly treat of "Manual Training" proper, though in one or two instances, such as the paper read by Miss Fay, at Chicago, the whole subject of industrial training for boys and girls in all grades of schools is considered.

In the reports of the discussions, at the meetings of conference held in Boston; at the sessions of the National Educational Association in Chicago; and of the Department of Superintendence in Washington; the opinions expressed by many experienced American educators will be found.

As the advocates of Manual Training have long felt the need of filling the hiatus now existing between the occupations of the Kindergarten and those of the Manual Training School proper — a period of six or eight years of school life — with some suitable methods of intermediate training by which the facility acquired in the Kindergarten shall be progressively developed; and as, in the judgment of some, this desired method exists in the Wood Slöjd Instruction of Sweden, the paper on this subject compiled by the Editor of this Report from various authorized publications, mostly from those issued by the New York Industrial Educational Association under the Editorship of Dr. Butler, is here inserted as Paper IX of this Appendix.

The two papers which follow this, Nos. X and XI, on "The Physiology of Manual Training," and on "The Psychology of Manual Training," the first by a distinguished German medical Professor, and the last by a no less distinguished American Professor and Educator, explain themselves and will be found full of interest and suggestion.

As so much space has been given in this Appendix to the statements by leading advocates of the new methods, it is due to a truthful presentation of the present situation of these educational questions that the fact that they are not suffered to pass without question should appear. In the two papers of this Appendix, numbers XII and XIII, by Superintendent A. P. Marble, of Worcester, Massachusetts, and Principal H. C. Missimer, of Erie, Pennsylvania, respectively, the whole situation is reviewed, and the arguments advanced by the advocates of Industrial Training are taken up seriatim.

The criticism by Superintendent Marble of the various plans proposed for putting industrial training in the public schools makes what Horace Greeley used to term "mighty interesting reading." The judgment of such a clear-sighted observer and experienced educator — sufficiently progressive to have been among the earliest supporters of Walter Smith's plan of teaching drawing in public schools —

is not to be snuffed out with a sneer, but is worthy the thoughtful consideration of all who are intelligently interested in the movement.

The thoughtful paper by Principal Missimer, whose valuable statistical contribution to the defence of the public schools, given in Appendix I, paper VII, sufficiently attests his fidelity to the interests of the Common Schools, may well furnish food for thought.

The Report by the Committee on Pedagogics to the Council of Education during the Annual Meeting of the National Educational Association at Nashville, Tennessee, July 15, 1889, on "The Educational Value of Manual Training," received barely in season for insertion here, gives the latest official word by American Educators on this interesting subject.

The paper read by Dr. Harris, at the Nashville meeting, concerning the intellectual value of tool work will be found a valuable contribution to the discussion which is, just now, of such interest to educators.

With these four papers to round out and complete this Appendix, it is believed that a satisfactory showing of the views of the most active and advanced American Educators concerning all phases of the industrial training movement has been here made.

As Professor Woodward, of St. Louis, is recognized as a leading pioneer in the advocacy and establishment of Manual Training Schools in the United States, ably supported by the Massachusetts Institute of Technology, it seems fitting that the words of President Walker and Professor Woodward should be first given in this Appendix, as spoken on the interesting occasion of Professor Woodward's visit to Boston in response to the invitation of many leading citizens, as herein recorded.

II.

MANUAL TRAINING.

EXTRACTS FROM AN ADDRESS DELIVERED IN BOSTON DECEMBER 16, 1885, BY PROFESSOR C. M. WOODWARD, OF ST. LOUIS, WITH REPORT OF SPEECHES AT THE BANQUET GIVEN IN HIS HONOR DECEMBER 17, 1885.*

In response to a request signed by the Governor of Massachusetts, the Mayor of Boston, the City Superintendent of Schools, and a number of other leading citizens prominent in educational matters, Professor C. M. Woodward, principal of the Manual Training School connected with Washington University, St. Louis, delivered in Boston, in Huntington Hall, on December 16, 1885, an address on the subject of Manual Training. General Francis A. Walker, President of the Massachusetts Institute of Technology, presided, and after a few preliminary remarks introduced the speaker.

(*a*.) *INTRODUCTORY REMARKS BY GENERAL WALKER.*

General Walker rose and spoke as follows:

FORMER SCHOOL METHODS CRITICISED.

There has been for many years a great and a growing discontent with the course of instruction in our public schools,— discontent arising not from the fact that the studies and exercises actually pursued are deemed to be not in themselves worthy of the attention of scholars, but because that course of instruction fails to include other studies and exercises which are by many deemed to be equally important as means of mental training, with those which are included in the curriculum of the schools, and even more important, so far as concerns the personal and individual interests of the scholars in later life, and the economic, and even, I might say, the political interests of society itself. If I may indulge in a reminiscence, I entered the public school of Massachusetts when four years of age; I entered college when I was 15 years of age. I cannot now recall that in the intermediate time in any school under the control of the Commonwealth of Massachusetts I ever passed one quarter of an hour in any exercise which was disposed or calculated to train my powers of perception, or to cultivate the habit of observation, or to give hope and strength to that faculty which is the one divine faculty in man,— the power of creation, of doing and making. It seems, perhaps, an extravagant assertion, but I think if any gentleman in the room of mature age will look back 30 or 40 years and consider what were the exercises and studies in which his school life was spent he will find it difficult to recall any exercise which was calculated to develop that side of the man and those powers of the will,—observation and perception. And yet I make bold to say that in practical life the men who succeed do so more,—except in one or two overcrowded professions—by acute powers of perception, a well trained habit of observation and the ability to interpret phenomena.

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* The reports from which these extracts are taken appeared in the columns of the Boston Advertiser on December 17 and 18, 1885.

HOW SCHOOL DEFECTS WERE IN PART COMPENSATED.

At that time travelling about the village, roaming in the woods did their part to make up for these deficiencies of instruction in the school in developing the powers and faculties to which I have referred. Unfortunately, our boys in the cities have not those resources, and unless the school gives them the systematic training and the powers of perception, cultivates for them the habit of observation, puts into them the perceptive faculty, that part of the mind is likely to remain almost completely neglected. Since that time much has been done to improve the traditional course of school studies.

THE ADVENT OF THE KINDERGARTEN.

The kindergarten has come, and, in spite of many needed modifications—in spite of a simplicity which seems to presume a childishness and degree of ignorance and innocence which no American child was ever guilty of—the kindergarten has come to stay. It has done much for younger children, and the kindergarten method has influenced instruction in the primary years of the public school.

THE TEACHING OF ELEMENTARY SCIENCE.

On the other hand, the study of science has introduced into our public schools much in the way of training those faculties which were so much neglected in the earlier time. Still there remain grave grounds for amending our system of school instruction, because of the neglect of certain exercises and classes of study which are believed to be essential to the thorough training of the mind and a better preparation for the work of later life.

MANUAL TRAINING SCHOOLS.

These needs have been felt and remarked with increasing freedom during the few years past; but while we in Boston have been talking of this matter our Western friends have been acting. [Applause.] And Boston stands now in the somewhat unusual position of being distinctly behind in educational matters, so far as this great needed reform in the curriculum of the public schools is concerned. During the past few years several schools of very high character have been instituted, and have been developed in several of the important cities of our country. The earliest of these schools, so far as I am advised, in anything like its present form, which offers, in my mind, the best model and example for institutions of this character (which, I believe, are in the course of the next few years to be found almost as widely distributed as the public schools of the past), the earliest, the most successful and the most worthy of imitation of all these schools, is that which is connected with the Washington University of St. Louis, and of which the director is Professor Woodward.

Professor Woodward took charge of this school in 1880, with the promise that it should be no charge upon the regular polytechnic school, and he has been eminently successful. With this preface, I have the honor and the pleasure to introduce Professor Woodward. [Applause.]

(b.) *PROFESSOR WOODWARD'S ADDRESS ON MANUAL TRAINING.*

Dr. Woodward was warmly received, and during his lecture was frequently interrupted by applause. He said:

Forty years ago Ralph Waldo Emerson charged popular education with a want of truth and nature. He complained that an education to things was not given. He saw that literature, far from being the only factor in civilization was not even the chief one. Said he: "We are students of words; we are shut up in schools and colleges and recitation room from 10 to 15 years, and come out at last with a bag of wind, a memory of words, and do not know a thing. We cannot use our hands, or our legs, or our eyes, or our arms." And again, speaking of the exclusive devotion of school to Latin, Greek and pure mathematics, "which by a wonderful drowsiness of usage" had been "stereotyped education," he says: "In a hundred high schools and colleges, this warfare against common sense still goes on."

THE MODERN ADVANCE IN EDUCATIONAL IDEAS.

This man of clear vision pointed out the road which the next generation was to follow. With wonderful unanimity the educational forces of America are facing in the new direction. Formal education is much broader than of old, and the methods and materials used are so new or so changed that we call the result the new education, and insist that some manual training should run through the entire course from the kindergarten to the high school. The necessary appliances for the primary and grammar grades are simple and few, the most essential thing being teachers, into whose preparatory training manual elements have entered in their due proportion. By the eighth or ninth year of school life the pupils are ready for the systematic and comprehensive work I am about to describe. The school time of the pupils is about equally divided between mental and manual exercises.

DIVISION OF STUDIES AND OF TIME IN ST. LOUIS MANUAL TRAINING SCHOOL.

The daily session begins at 9 a. m. and closes at 3.30 p. m., 30 minutes being allowed for lunch. Each pupil has daily three recitations, one hour of drawing and two hours of shop practice. The course of instruction covers three years, and embraces five parallel lines, three purely intellectual and two both intellectual and manual, as follows :—

First. A course of pure mathematics, including arithmetic, algebra, geometry and plain trigonometry.

Second. A course in science, and applied mathematics, including physical geography, botany, natural philosophy, chemistry, mechanics, mensuration and bookkeeping.

Third. A course in language and literature, including English grammar, spelling, composition, literature, history and the elements of political science and economy. Latin and French are introduced as electives with English or science.

Fourth. A course in penmanship, freehand and mechanical drawing.

Fifth. A course of tool instruction, including carpentry, wood turning, moulding, brazing, soldering, forging, and bench and machine work in metals.

Students have no option or election as to particular studies, except as regards Latin and French. Each must conform to the course as laid down and take every branch in its order. You will see, then, that we have no mean or narrow object. "The education which the manual training school represents is a broader, and not as the opponents of the new education assert, a narrower education." We put the whole boy to school, not a part of him, and we train him by the most invigorating and logical methods. Pure literature is a matter of books alone. The study of science in the new education involves both new materials and new methods.

THE LIMIT OF ATTENTION THE LIMIT OF PROFITABLE STUDY.

When the limit of sharp attention and lively interest is reached, you have reached the limit of profitable study. If you can hold the attention of a class but 10 minutes, it is worse than a waste of time to make the exercise 15. The weary intellects will roll themselves up in self defence, and suffer as patiently as they can, but the memory of those moments of torment lingers and throws its dreadful shadow over the exercise as it comes up again on the morrow; and how automatically, as these overtaught children take their places again, do they roll themselves up into an attitude of mental stupidity. Intellectual growth is not to be gauged by the length or number of the daily recitations. I firmly believe that in most of our schools there is too much sameness and monotony, too much intellectual weariness and consequent torpor.

I would make school attractive and indispensable to a large class of boys whose controlling interests are not in the study of words, the forms of speech, or the boundless mass of information which is given in books ; and I would give such boys a fair chance of adequate development. Such boys are not necessarily blockheads, nor even dull. Their intellectual powers may be strong, though their strength lies not in the direction of memory. The claims of this class of boys have been set forth by no one so eloquently as by General Francis A. Walker. Says he, and I give almost his exact words: There is now no place, or only a most uncomfortable one, for those boys who are strong in perception, apt in manipulation, and correct in the interpretation of phenomena, but who are not good at memorizing, or rehearsing the opinions and statements of others ; or who by diffidence or slowness of speech are unfitted for ordinary intellectual gymnastics. These boys are quite as numerous as the other sort, and they are quite as deserving of sympathy and respect, besides being rather better qualified to become of use in the industrial and social order. And yet for this class of boys the school offers almost nothing upon which they can employ their priceless powers. Now the manual training school proposes to cultivate and harvest both kinds of boys.

Hence, if we abridge, in some cases, the hours given to books and the time wasted in idleness, and introduce exercises of a widely different character, the result is a positive intellectual gain. There is plenty of time if you will but use it aright. The students of a well conducted manual training school are intellectually as active and vigorous as in any high school. The education of the hand is the means of more completely and efficaciously educating the brain.

Manual exercises, which are at the same time intellectual exercises, are highly attractive to healthy boys. If you doubt this, go into the shops of a manual training school and see for yourselves. Go, for instance, into our forging shop, where metals are wrought through the agency of heat. A score of young Vulcans, bare armed, leather aproned, with many a drop of honest sweat, stand up to their anvils with an unconscious earnestness which shows how much they enjoy their work. What are they doing? They are using brains and hands. They are studying definitions in the only dictionary which really defines. Where else can they learn the meaning of such words as " iron," " steel," " welding," " tempering," " upsetting," " chilling," etc.? And in the shop where metals are wrought cold (which, for want of a better name, we call our machine shop), every new exercise is like a delightful trip into a new field of thought and investigation. Every exercise, if properly conducted, is both mental and manual. Every tool used and every process followed has its history, its genesis, its evolution.

A GRIEVANCE AGAINST DICTIONARIES.

I am almost ready to say, " Confusion to the memory of Sam Johnson," for since he started the fashion of making dictionaries, pupils have been set to learn about substances, products and processes from dictionaries rather than from things themselves. When we reflect that every verb in the dictionary relies for its meaning to us upon our personal experience in being, doing and suffering, we shall realize something of the importance which personal physical experience bears to education.

The first step of the new education was the introduction of explanatory pictures and diagrams in the books studied and read. This was a great gain, and many of our illustrated text books are to-day marvels of excellence. As books they leave little to be desired. But words, neither alone nor with pictures, can supply the want of things themselves. Next came the introduction of apparatus and models which the teacher could handle and show to his pupils, and sometimes, if he knew how, could use before them. The lecture method was another important gain, and it has accomplished much good. The difficulties attending it, however, have been such as to prevent its general adoption, and its use has been limited to schools of high grade.

The next step, and the one we are now taking, is the adoption of the laboratory, the putting of things, materials, apparatus, tools and machines into the hands of the pupils themselves, and giving them a conscious knowledge of properties, relations and processes. This is the crowning feature in education.

It was formerly supposed that the manufacturer, the miner, the builder of houses, or bridges, or ships, the millwright, the farmer, the man of commerce, etc., needed no education beyond that gained by actual work at his trade or desk. Now, however, such strides have been taken in all these callings, through the application of the principles of modern science, that none but carefully trained and educated men can expect to secure and keep places of honor and profit in them. Now, without neglecting to train our lawyers, engineers and physicians, literary men and gentlemen of leisure, should we not at least as directly aim to train these other men for their work?

A GENERAL NEED AND DEMAND EXISTS FOR MANUAL TRAINING.

From the observed influence of manual training upon boys and, indirectly, upon the parents, I am led to claim that, when the last year of the grammar and the high schools include manual training, they will meet a wider demand; that the education they afford will be really more valuable, and consequently, that the attendance of boys will be more than doubled. Add the manual elements, with their freshness and variety, their delightful shop exercises, their healthy intellectual and moral atmosphere, and the living reality of their work, and the boys will stay in school. Such a result would be an unmixed good. I have seen boys doing well in a manual training school who could not have been forced to attend an ordinary school.

THE PURPOSE OF MANUAL TRAINING DEFINED.

The object of the introduction of manual training is not to make mechanics. I have said that many times, and I find continual need of repeating the statement. We teach banking, not because we expect our pupils to become bankers; and we teach drawing not because we expect to train architects, or artists, or engineers; and we teach the use of tools, the properties of materials, and the methods of the arts, not because we expect our boys to become artisans. We teach them the United States Constitution and some of the acts of Congress, not because we expect them all to become Congressmen. But we do expect that our boys will at least have something to do with bankers, and architects, and artists, and engineers, and artisans, and we expect all to become good citizens. Our great object is educational; other objects are secondary. That industrial results will surely follow I have not the least doubt, but they will take care of themselves. Just as a love for the beautiful follows a love for the true; and, as the high arts cannot thrive except on the firm foundation of the low ones, so a higher and finer development of all industrial standards is sure to follow a rational study of the underlying principles and methods. Every object of attention put into the school-room should be put there for two reasons, one educational or (to use a word I much dislike) pedagogic, the other economic. Training, culture, skill come first; knowledge about persons, things, places, customs, tools, methods, come second. It is only by securing both objects that the pupil gains the great prize, which is power to deal successfully with the men, things and activities which surround him.

A word in regard to the moral effect of our combination. Its influence is wholesome in three ways: It stimulates a love for intellectual honesty; the good moral effect of occupation is most marked; a third moral benefit is self respect and a respect for honest, intelligent labor. Without going into the perplexing questions of labor and capital, I feel sure that the only way to prevent such conflicts in the future is to properly train the children of the present generation. The men who make up mobs are deficient in either mental or manual training, or both. They never had a chance to get both side by side in a public or private school.

THE OLD-TIME MANUAL LABOR SCHOOL.

The so called "manual labor" schools have been founded as semi-charitable institutions. There have been attempts to solve the problem, How shall a poor boy be enabled to earn his living and get his education at the same time? In my judgment there is no solution to that problem, and the sooner we recognize the fact that a good education costs money, and that in every attempt to shift the burden of support upon children under 17 years of age we are guilty of cruelty and neglect. Of necessity, the form of labor adopted in these labor schools is that which involves a minimum of training and skill and a quick return. The pupils learn some of the elements of a narrow occupation, but on the whole their education, whether mental or manual, is between very narrow limits. Such institutions have few points in common with a manual training school.

DIFFERENCE BETWEEN EUROPEAN AND AMERICAN INDUSTRIAL SCHOOLS.

As to the industrial schools of Europe, we all know they are intended to foster certain established industries. There are in Europe many apprenticeship schools which are generally of a higher grade than the industrial, and which have a somewhat broader aim, though in every case the definite object is to make every boy who attends, no matter what his natural aptitude, a skilled, practical mechanic. Now neither the American manual labor school, nor the European industrial school, nor the apprenticeship school comes very near the manual training school. With them either self support or a trade is the great and nearly the sole end. The trade schools have a worthy end, and they are successful. They have greatly improved the grade of technical skill in Europe, and they have accomplished much for their industries. I have no opposition to make to them, but I wish it to be well understood that a manual training school is quite a different thing. Instead of the two grand objects we have in view—one general and educational, the other economic—they have but one, the economic. In our school the manual elements are subordinated to the intellectual. One hour of drawing and two hours of shop work daily is the maximum demand on the manual side. On the other side, there are three recitation hours and private study enough to learn three lessons. All the hand work, like all the book work, is as "human" as possible. Not every tool, not every book, not every art, not every science is crowded into our curriculum. We teach a few things, and we try to teach them well. I think we have introduced enough to secure the development of power.

FALLACIES EXPOSED.

Two old fallacies have stood in our way, and they stand yet in many minds. One is that all the manual arts, except penmanship and free hand drawing, should be learned at home or in connection with some business establishment. They always have been so learned, it is urged, if learned at all, and there is no good reason to suppose that they can be acquired to any useful extent in any other way. Certainly they cannot be taught in school. There is little need for me to answer this objection here in Boston. It has been answered in many ways. It has been proved a hundred times that the logical methods of the school-room are as applicable to the theory and use of tools and implements as to chemistry or algebra or book-keeping, and that no business establishment is willing to train a boy solely in the boy's interest. The other fallacy is that the moment one introduces manual training he must bring in the idea of self support. The notion is inherited. Every apprentice boy, every counting-house fag was supposed to pay for his training by his labor. So every stranger who looks in upon our school asks what we do with the boy's work; and, can we not make things to sell? They forget, in the first place, that one's first results in a new field are always valueless; and, in the second place, that the more an establishment is a factory, the less it is a school. No attempt has ever been made, to my knowledge, to make a school of penmanship, or English composition, or surgery, or medicine, or law, self supporting.

THE TRADES TO WHICH MANUAL TRAINING OPENS.

Now, as to the relation which our instruction bears to the crafts in most frequent use. During the total allowance of 380 hours, which, in the first year, every boy in the class must devote to wood work, the boys are learning some of the preliminary steps and essential features of several wood working trades. The sharpening of chisels, gouges, bits, and planes; the filing and setting of saws; learning to square up and lay out work with precision; the cutting of mortises and tenons: the details of mailing, gluing, pinning, and dovetailing; various kinds of inside and outside turning, chucking and fitting, etc., etc. All these belong equally to the cabinet-maker, the chair maker, the pattern maker, the wheelwright, the house carpenter, the stair builder, the cooper, the car builder, the wood carver, and so on. While thus learning the intelligent use and care of tools and materials, our boys become very proficient in making and using what are called "working drawings." This last accomplishment is essential to intelligent progress in any trade. The training given during the second year of school in the forging shop is equally fundamental and equally broad in its application. The study of form as related to strength and economy of material; the operations of drawing, upsetting, bending, punching, breaking, welding, tempering, brazing, and soldering are fundamental in character and preparatory to a score of distinct occupations the special business and conventional details of which we do not pretend to teach. Our machine shop, in which the third year students spend their 380 hours of shop time, is quite appropriately named. To be sure, there are benches where regular exercises in chipping and filing are done, but the greater part of the attention is given to the study, use, and management of machines. To this end machines with great range of adjustment and always requiring precision and the exercise of forethought and good judgment, are employed. The materials wrought are those of which machines are generally made, viz, iron, cast and wrought steel of various grades, and brass. Their cutting tools the students generally make for themselves at the forge. We have in all 21 iron cutting machines, and a 60 horse power Corliss engine. It is no small thing to be able to use all these machines intelligently, not to say skilfully, and in this age, when many new machines are to be made and all sorts of machines are to be used in the arts, there can be no surer way than ours of developing that "directive power" which is generally conceded to be one of the chief fruits of a good education. Now, whether our boys become mining or civil or mechanical engineers, farmers or mechanics, merchants, manufacturers, lawyers, or statesmen, it seems clear that this training will give them additional power, both in moulding circumstances and in their intercourse with men, taught and untaught, skilled and unskilled.

COST OF THE NEW METHOD.

A single word as to the cost. I do not recommend manual training because it is cheap, or because it will result in an immediate saving of money. In the long run it will save much money, but its establishment and maintenance are expensive. To begin with, a building with school rooms and desks, drawing rooms and stands, shops and tools, cost more than one with only school rooms and desks. Our working sections have from 20 to 24 students each, and for each section there must be a teacher. In the St. Louis school there are 230 pupils and 11 actual teachers. Again, the current expenses of shops and laboratories are considerable. In my school it costs from $5 to $7 per pupil per year, for materials. But I strongly insist that the added value is worth the added cost, and that no community in which a manual training school has once been well established would allow its expense to be an argument against it.

It almost goes without saying that the varied exercises of a manual training school are highly conducive to physical health. On the intellectual and moral sides I hope I have shown that the effect must always be good. A training which enables a boy to make the most of himself in a broad and high sense must be regarded as healthy. A manual training school has many windows, and it looks out upon a large circle of human activities, and the kindling light shines in on every side. As with its windows, so with its doors: its pupils step into the busy world in all directions, each choosing a career where he may be reasonably certain of success. There are many avenues to culture and to success in life. We strive to keep them all open.

When the formal lecture was over, Dr. Woodward answered a number of questions put to him by gentlemen in the audience. As to the effect of his system of training on the classes that had graduated, he said that nearly half of the students were now students in other schools, which showed that the love of study had not been killed in them. Those at work drift into industrial pursuits. They are in some cases farmers and in some cases in machine shops, but they are rather apt to be employed as draughtsmen and pattern makers. They are found exceedingly useful in large establishments where a boy is wanted to do many different kinds of work. Where one of these boys has been employed, they have generally sent for another one. [Applause.] The boys on a farm immediately find that all the farm machinery is put into their care, no matter how young they are. Dr. Woodward said the system of manual training could be grafted upon the public school system by means of a separate institution or by a building in connection with the high school. The latter plan had been adopted in Toledo, and courses of study were marked out with the option of taking manual training or not taking it. This training increased the cost of education per scholar about 50 per cent., but it would be more popular than the present high school system, the speaker thought, because it would appeal to a wider constituency.

The next evening a complimentary dinner was given to Professor Woodward by Mr. John S. Clark at the Hotel Vendome, attended by some seventy guests. In the speeches following the dinner the topics suggested by the address of the previous evening were treated by several speakers whose names are authoritative in the educational world.

(c.) *THE AFTER DINNER SPEECHES.*

After the coffee had been passed Mr. Clark rapped for order and said :—

GENTLEMEN :—We meet to-night to do honor to a man who has done signal service in the cause of education. Most of you remember about 10 years ago, on the western side of the Institute of Technology, a long, low building with no architectural pretensions. Many of you in passing by may have heard a sound as from a blacksmith shop or the rumbling of machinery, and you, perhaps, may have thought, "What an unsightly building in this part of the city and so near such a fine structure as that of the Institute of Technology!" In that little, unpretentious building was born, I may say, one of the most important educational ideas that perhaps has come to America. It was not favorably received in Boston—I doubt if it was understood. But the idea that Dr. Runkle began to work out there spread rapidly elsewhere, and in the West it was repeatedly caught up and examined with the utmost scrutiny on the part of those who were charged with the direction of public education. I remember in 1878, in visiting St. Louis, I paid a visit to one of her eminent citizens, who surprised me by the extent and thoroughness of his information in regard to the beginning of a feature in education of which we knew but little here, in Boston; and I was not surprised a short time after to find that gentleman one of the donors to the St. Louis Manual Training School, of which our guest is the principal and the director. [Applause.] That idea established at St. Louis rapidly spread elsewhere. Shortly after the Commercial Club of Chicago, visiting St. Louis, was shown this school. On their return, at a meeting addressed by two gentlemen, both of whom I hoped to have here this evening, the claims of this school were presented, and before the company dispersed $65,000 was raised and the club pledged itself to raise $100,000 for the establishment of another such school as that at St. Louis, and to-day on Michigan avenue you will find as one of the principal interests of that city another manual training school. Our guest is fresh from the inauguration of another similar school at Toledo. Baltimore has one in operation; and at Columbus, at Indianapolis, at Milwaukee,—I might say at a dozen or more places in the West, they are already discussing this feature of education, and I doubt not that within a year we shall see a number more in full operation.

CAUSES WHICH HAVE GIVEN RISE TO THE AMERICAN MANUAL TRAINING SCHOOLS.

Now what does this mean? Is this a mere spasm of education,—something that will soon pass by? Let us look for a moment at the social conditions out of which these schools have grown, and of which they are, in a measure, the expression. We frequently have discourses upon the changes taking place about us; but do we fully realize the changes that have taken place within the memory of some gentlemen at this table,—social, political, industrial? To go back to a starting point, suppose we take the year 1814, when the nations of Europe broke down, exhausted after nearly a century of military struggle. For that century the individual was simply regarded from the point of view of the soldier,—as a fighter. The pathetic lines of Wordsworth indicate what was the condition of England, the most favored of all the nations taking part in this long warfare:—

> Of the rich many became poor,
> And of the poor did many cease to be.

Now if we consider the point at which the military idea broke down and the industrial idea began to come forward, you have a starting point for comparison in this wonderful development of the last 60 years. Speaking broadly, there has been comparative peace, and you see that the governments, instead of regarding the individual as a soldier, have come to regard him as a citizen, as a unit around which the state centres, out of which the state grows. It was pertinently remarked the other day at Toledo that the two greatest social evils are a king at the top and an ignorant man at the bottom. The social organization to-day has got rid of its king, but it has not got rid of the ignorant man at the bottom. The unit must be a productive unit, which the soldier was not. In the industrial type of society, man is given to production and preservation. The contrast between the two is so immense that we see at once the cause of our prosperity in the last 70 years. You find here in the logical order of development, freedom to think, freedom to labor, and flowing from it freedom to exchange labor, as the last or one of the later results in social development. Let us be just to the public school. I think the idea under which it has been founded is the noblest. The development of all the faculties of the individual is the idea of the public school as represented by so many gentlemen at this board. The question is, Is giving the child the theoretical idea in regard to life the best way to enable him to meet the demands of life? In the social competition it is of prime importance that the individual shall be self sustaining and self respecting, and in order to do that it is of importance that he be able to earn his own living.

If I understand rightly the idea of the manual training school, it is not to tear down but to broaden the base of the public school, and such a school is the one repesented by our honored guest. The idea, therefore, that went out from Boston in weakness, in dishonor, returns to-night in strength and in power. With what strength and what power I call upon our friend Dr. Woodward of St. Louis to describe.

DR. WOODWARD RESPONDS.

DR. WOODWARD was received with enthusiastic applause as he rose to reply. When quiet had been obtained he said:—

MR. CHAIRMAN AND KIND FRIENDS,—I assure you that this welcome touches me very closely. I am so thoroughly a Massachusetts boy that I can not stand or sit in a company of Massachusetts men with whom my heart throbs so harmoniously as with yours on an occasion like this, without being deeply touched. It is not my first return from a long wandering, but it is my first opportunity to stand before my fellow laborers in the great field of education in the State of Massachusetts. It has always been my pride to say that I was a Yankee; and even in the presence of men to whom the word meant something very unpleasant, I have always insisted that I was a full blooded Yankee. [Applause.] You may be interested to know that I am not the only one who takes that pride. We are not all barbarians, or cowboys, or candidates for the presidency. Those from east of the Hudson River are associated into the New England Society, and Tuesday it will be my duty to say something to that society, and I assure you that to that meeting I shall recall this with a good deal of pleasure.

THE YANKEE.

Every good idea out there is supposed to be a Yankee idea, and in England I find that they have a similar notion. They not only regard us as being exceedingly sharp, but they think we are the most wonderfully inventive people they know of. One lady asked me in an evening gathering, "Professor Woodward, are there any gentlemen in America who have not taken out patents?" I rubbed my head a while, "I know one." "Who is that?" "It is my brother. It does not follow that he is not a man of inventive power. He has a great deal of it, but then he is a man of remarkable self control." [Laughter.]

After alluding to the changes which had come over Massachusetts during his 20 years' absence, Dr. Woodward quoted from Theodore Winthrop, a private in the Seventh New York in the late Civil War, an account of the way in which Massachusetts men in the Eighth Massachusetts Regiment came forward to lay tracks, build bridges, and repair locomotives and steamboats. That, said the speaker, is a tribute to the Massachusetts men that suggests a point which is very near my heart—that is, the subject of manual training. Now, gentlemen, I gave you last night a whole page of manual training; but between you and me the whole thing can be expressed in five words. My whole theory of education can be expressed in six monosyllables: "Put the whole boy to school." I can ask nothing more. The boy is a very complicated machine. He needs to be trained on all sides, and all I ask is that he shall have the light shine in on all sides of him. Last night I used a phrase to this effect, that the manual training school has many windows and that the light shines in on every side. With your permission, I will elaborate that idea a moment. You know how plants that stand in the window and receive the light on only one side grow deformed. On the light side they are blooming and prosperous and fresh, but on the other side they are wanting. As with the plant, so with the child. Not that I would shut off one ray of light. I ask not that you shall close that window, but open the other. Let the light come in at the further side. Let all light shine in upon our boys.

INDICATIONS OF APTITUDE.

There are other gentlemen to speak whom I am anxious to listen to; but there are one or two things which I will just touch upon which I could not touch upon last night. The subject is a very large one. In certain circulars that I have sent out I have made this remark—and it has raised a question in many minds—I say that in the examination for admission no account is made of mechanical tastes. Some people think that is very strange. They think that I ought to give those boys a preference who claim to have special mechanical tastes. We do not take that into account at all, because the developments of the early years are more matters of accident than they are of natural aptitude. I have had pupils come to me who were said to be utterly without mechanical taste. They were brought to me that it might be fairly learned whether they had any mechanical tastes or not. Now, such boys are just as apt to develop into good workmen as those who are reputed to be great geniuses in the mechanical line. I have had boys come to me who were befriended by wealthy people because they were so given to mechanics, because they never could be kept away from machinery. I have one in my mind who went out a worthless workman. He had a morbid desire to see the wheels go round, but he never could be made to do work accurately or with precision. There was no development in him. I do not wish to be understood as saying that there are no such things as aptitudes, because there are. I merely say that the probability is that we cannot get at them much previous to 14 years. I think that in the course of the training they get in our school the thing settles itself, and those who are unfit for mechanical work find it out. That is a point which is worth considering—that the boys know themselves when they leave our school as they cannot in any other kind of school that I am acquainted with. At Harvard the only training on the physical side I got was on the cricket field and in the boat.

HOW AN ENGLISH MANUAL TRAINING SCHOOL CAME TO BE ESTABLISHED.

I have tried to make it clear, also, that there is no secondary object that comes in sight compared to training the boy. In Europe they have done differently. In England they have not known what to do. They have not wished to adopt the technical schools of France, Germany and Belgium. They have tried apprenticeship schools. When I went to Manchester last winter I found an apprenticeship school for very young boys, where the sole object was to learn particular industries. I discussed this question of manual training on three separate occasions. Six weeks afterward, when I was on the Continent, they determined to close the technical school, but in its place, in the same building, there was opened in September a manual training school exactly on the plan of the school of St. Louis, in America. [Applause.] And that school is now in successful operation. So that our ideas have already taken root and are springing up in England. Now, I have only one word more — to call attention again to the balanced plan of our schools. Some of you may have heard of our motto. It was written under the inspiration of the enthusiasm of the moment by the Rev. Dr. Eliot, president of Washington University. It is very simple, and it stands over the door of the manual training school:—

Hail to the skilful, cunning hand!
Hail to the cultured mind!
Contending for the world's command,
Here let them be combined.

In closing, Dr. Woodward paid a deserved compliment to the courtesy of the host, Mr. Clark, and his zeal in educational matters.

REMARKS BY EX-GOVERNOR RICE.

Ex-Governor ALEXANDER H. RICE was the next speaker. He said that it gave him great pleasure to attest his appreciation of the character and services of the distinguished guest. He paid a high compliment to the address of Dr. Woodward Wednesday evening, and said he believed that it was a valuable contribution to the cause of education. Nature had not been lavish in her gifts to the inhabitants of New England; the soil was rather unproductive and mineral wealth was not abundant. In consequence, the people of the New England States were compelled to follow industrial pursuits. The world had grown considerably since the days of the apprentice system, and if an attempt was made to return to that method it would be found entirely out-grown and inadequate. A larger amount of intellectual and manual training was now required than ever. Just how to combine the two was one of the most important questions for educators to decide. Competition now is between nations rather than between States, and this competition is becoming a very interesting study. The arts are now on an equal basis throughout the world. A great change in the arts has taken place within the past 50 years.

Mr. CLARK then read a letter from Edward T. Steel, chairman of the board of public education of Philadelphia, in which he regretted his inability to be present, and expressed himself in favor of manual training, and hoped that the day was not far distant when this system would be adopted throughout the State of Pennsylvania. Mr. Clark said that he had been able to obtain the presence of Mr. Steel's able colleague, Mr. MacAlister of Philadelphia, and he would call upon him as the next speaker.

REMARKS BY MR. MACALISTER, SUPERINTENDENT OF SCHOOLS IN PHILADELPHIA.

Mr. MACALISTER said that he desired to speak of the benefits of manual education from the standpoint of a public school master. If the manual training school is to make blacksmiths, carpenters, or any kind of operatives, it is not wanted. The business of education is, according to the definition of Herbert Spencer, to fit men and women for complete living. No man can live a complete life unless his whole nature has been educated. It would seem that thus far the public school falls short of accomplishing this purpose. It will be seen, however, that the tendency of education has been in the direction of the objects to be accomplished by manual training. The problem of education to-day is the same as it has always been — the coördination of the education of mind and matter. If manual training does not accomplish this it has no place in the public schools. There is now a most liberal feeling in the recognition of new ideas in advancing education. The conditions of society are changed and are very different from what they were 50 years ago, and for this reason it ought to be insisted that the public schools should educate a man for the social conditions in which he is placed. The best education is cultured education. The effect of manual training in the schools is to make labor more respectable, and to carry into the world a sympathetic intelligence with labor. This is the chief end of the practical aspect and outcome of manual training.

THE AMERICAN PUBLIC SCHOOL OF MASSACHUSETTS ORIGIN.

The public school was born in Boston, and in this city, above all other cities, public education has been fostered. To day in the West it will be found that the New England school has been placed as the foundation of growing localities. There is no institution now at the command of the state that will so effectually mould into American citizens those who shall come to this country from every clime. The greatest aim of the public school is to educate a man on all sides. There was a prospect, the speaker thought, that soon the schools in England would be modelled after the American system, and there was no hope for the future of France or Italy unless the American method of education was made the foundation of the public schools of those countries. There is now in operation in Philadelphia a manual school, and in the Girard College, and in a Catholic institution in that city manual training has been introduced as one of the principlal features.

General WALKER, of the Institute of Technology, the next speaker, said, in a few remarks, that he believed, with all his heart, i· manual training, beginning at the bottom and extending through all the various branches of a lad's education.

Mr. SEAVER, the superintendent of the public schools of this city, added his testimony as to the benefits of manual training in the public schools, which had come under his personal observation. The time had now arrived, he said, when the advocates of this method of education could show what had been accomplished by the results seen in the outcome of the St. Louis school and the Institute of Technology in this city. What was now needed was some generously disposed millionaire or corporation to aid in establishing a school of manual training in this city. In closing Mr. Seaver advocated a movement to secure the Franklin fund, now held by the city of Boston, for the purpose of erecting a public school building for the advancement of manual education.

III.

INDUSTRIAL EDUCATION IN THE COMMON SCHOOLS.

DISCUSSIONS HELD BEFORE THE CONFERENCE OF ASSOCIATED CHARITIES OF THE CITY OF BOSTON, DURING THE MONTHS OF JANUARY AND FEBRUARY, 1887.

(*a*) SESSION OF JANUARY 20, 1887.*

In room 15 of the big building of the Massachusetts Institute of Technology yesterday afternoon (January 20th, 1887) gathered about 100 ladies and gentlemen, nearly all of whom are known prominently as being much interested in educational, charitable and religious work in Boston. The subject for discussion was announced as "Industrial Education in Our Common Schools." Gen. Francis A. Walker presided, and there were present Rev. Phillips Brooks, Rev. A. A. Miner; Dr. John W. Dickinson, secretary of the state board of education; Mr. Edwin P. Seaver, superintendent of the public schools of Boston; Gen. J. F. Marshall, Mr. Robert Swan, and a large number of ladies from the Women's Educational and Industrial Union. After the records of the last meeting had been read, Gen. Walker said that the meeting was to be an informal conference on industrial education. So genuinely was it a conference or communion of views, that Dr. John W. Dickinson had been invited to give his views, which the speaker thought might be in direct opposition to those held by many. He would like to hear his reasons for not desiring a change, and he would like to have him say why he does not look forward favorably to the innovation in education as proposed. Dr. Dickinson spoke as follows:

(*b*) *DR. DICKINSON'S ADDRESS.*

There is doubtless a wide difference of opinion among educators concerning the ends which the public schools should labor to attain. Some affirm that the public schools have failed to accomplish their purpose unless they have prepared the children for their special places in life, or have trained them in some of the special applications of their active power. Others believe that, in the general education of every child, he should be considered an end unto himself rather than an instrument for the production of some end outside of himself, which would direct him to those exercises which have a tendency to produce a symmetrical development of all his faculties. This, they think, is the legitimate work of the public schools and the direct end to be sought in all disciplinary study.

In the first case, the educator would direct his attention to the communication of knowledge and to training his pupil in some of the occupations of life, In the second case, his mind is fixed on what he can lead the pupil to become. On account of the existence of these two opinions, and of the two plans of instructions that grow out of them, we hear much on the one hand of the advantages of practical knowledge, and on the other of the value of a symmetrical development of the mind. It seems necessary, therefore, for those who have anything to do in forming public opinion on educational methods to determine what the public schools of the country shall attempt to accomplish for their pupils. This appears the more necessary when we become aware that a choice of ends to be secured by school life will determine what subjects of study or occupations shall become the occasions of public school exercises. If it is the function of the public school to prepare the children for some special mode of gaining a living, this would graft upon our common school work the professional and industrial elements, and the schools would be

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* From report in Boston Herald of January 21, 1887.

NO LONGER COMMON SCHOOLS.

The next generation would be composed of citizens who might practice and pursue the trades with skill, but all would be done with special reference to supplying the wants of life. That intelligent desire for a higher life of the individual and a higher civilization of the state, which is strong in every rightly trained mind, would be obscured, and men would be moved chiefly by the mechanical and animal principles of action. But no system of public schools can be maintained for private utility alone. All social institutions must be founded on the idea of promoting public as well as private utility, and in the administration of the system the public good must not be sacrificed for private ends. It is because there is a human education which should pervade this acquisition of special professional or industrial skill, and which will have a tendency to elevate the individual above the narrowing effects of any profession or trade or occupation, and bring him to his special work with a trained mind, a strong will and a manly spirit, that we may establish public educational institutions, to be supported by a general tax, and may gather all the children into them for a common course of study.

The spirit which the individual brings from the public school to his special work is of more importance, as far as either public or private utility is concerned, than that sort of special skill which the public schools will ever be able to communicate; for this spirit will determine the use he will make of his skill after it is acquired. Mill says that if we can succeed in the disciplinary schools in making sensible men, they will be sure to make of themselves sensible laborers in the pursuit of whatever occupation they may choose.

It has been found that those who take up the work of life with minds trained to observe, to analyze, to generalize and to reason, joined with that self-control which enables one to turn his full attention to whatever he desires to do, soon outstrip all others in the amount and character of their efforts. Boys have been known to pass through the preparatory schools and the university with great credit to themselves as scholars in the branches of learning pursued in those institutions. In their courses of study they were trained to

USE THEIR ACTIVE POWERS.

in gaining a personal knowledge of the real objects and subjects of their thoughts. In this way they formed the habit of accurate observation for facts of performing with skill all those acts by which the mind passes from individual experiences to a knowledge of general truth. They left the university with that enthusiasm for practical life which a consciousness of the power of self-activity and a love for excellency always produce. Their collegiate education had not made them shiftless or indolent or despisers of hard, honest labor. Their acquired knowledge excited in them a love for more knowledge. The development of their faculties and their modes of thinking had created within them the power of an intelligent and an indefinite progress. With this general preparation for any application of their active power they entered the mills in a manufacturing town to learn all the mechanical processes that work up the raw material into the finished product, and with the idea of sometime becoming the directing agents. With minds trained to observe and generalize by the exercises of the schools now directed to the particular operations of their business, they at once became conscious of what must be generally true. The experience and testimony of these young persons and of their overseers prove that general intelligence and the power of self-control form the true basis of all high success in the practical applications of active power to the business of life. The term practical is sometimes applied to knowledge. This use of language often leads us into error, for by it we are in danger of attributing to knowledge that which belongs to power only.

A philosophical system of education, then, should provide for a general cultivation of the individual as a human being before his activities are turned into an unnatural channel by the pursuit of any trade or profession. But the idea of introducing into the public school any exercises that have for their immediate end to train the children for special phases in life has been quite generally abandoned, and for two reasons: First, it has been discovered that a citizen of a free State has no special place for which he is to be prepared, and to which he is to be assigned. The place that he is to fill is not to be determined by the accidents of birth, of race, or of wealth, but by the

QUALITIES OF HIS MIND,

and the use he makes of his power. The children, as they enter the public schools, do not bring with them the facts from which the teachers may infer what special instruction the future of each one will require. Second, there is a growing sentiment in favor of directing public instruction toward that general development of the individual which will make a man of him, and in accomplishing this end fit him to enter with intelligence upon any service to which his capacities and his inclinations may finally lead him.

It seems now to be generally admitted that any system of public instruction that does not make human development, with all that is implied in it, an end, is false in theory and a failure in practice. To justify the support of a system of public schools by a general tax there must be some common end which they are adapted to accomplish, and which is necessary to the well-being of the people. This is the only sound ground upon which the public school may rest and expect public support. Suppose, then, it be the concurrent opinion of those best able to judge that the proper function of the public school is to furnish the occasions of a symmetrical human development, it still remains to be determined what are these occasions. Human development is produced by the right exercise of power. In school the occasions of this exercise are objects and subjects of thought. These collected and rightly arranged constitute our public school courses of study. The schools are criticised for the poor quality of their products. Their graduates, it is said, pass out of their classes into active life with grave defects in their education. They know something of books, but they have neither the ability nor the inclination to produce anything. They can understand what is explained to them, but they cannot invent for themselves. They may have some power of thinking, but they cannot realize their thought in any product outside their own minds. Their capacities have been trained, but their faculties have been neglected. The criticism, while it is largely the product of an active imagination, has some foundation in fact, and directs our attention especially to one defect charged against the work of the schools. This defect consists of a failure to train the children to an independent use of their powers. It is proposed to remedy this defect by adding to our public school exercises a manual element, in the form of training in the use of mechanical tools. The most enlightened advocates of

THE NEW EDUCATION,

as it is sometimes called, would not occupy the attention of the public school with manual exercises for the manual skill which would result from them, but for the sake of that general development of active power which an orderly use of tools is said to be adapted to produce. For no other reason than this could the practice with mechanical tools find a legitimate place in the public schools. Admitting that the defects supposed actually exist, it does not follow that they are due to defective courses of study, or that they may be removed by adding the operations of the workshop to the list. Both of these things are assumed, but neither of them has yet been proved true.

Great manual skill is not infrequently found with those whose general intelligence is not of the highest order. In my experience I find instances of the existence of one without the other. Some minds are conscious of that knowledge only which they have obtained by experience, and of that power only which they have acquired by repetition. They may become skilled in imitation, but they will be wanting in independent and progressive power. They will also be wanting in that general intelligence which is necessary for the regulation of their private conduct as Christians, or of their public acts as members of a free state. The public schools of Massachusetts were established, that the learning necessary to the successful practice of self-government might not be buried in the graves of our fathers; that the learning necessary to set the people free from the bonds of those prejudices that enthrall the reason and the liberty of man might not be lost. It appears from what has been said that in every complete system of public instruction ample provision should be made for the cultivation of general intelligence before the attention is directed to any special mode of life. This is because the individual is of more consequence to himself, as a well-developed man, than he is as a mechanical instrument, and because he is more valuable to the State as an intelligent and virtuous citizen than he can be as a skilful artisan. It does not appear that the cultivation of

MERE MECHANICAL DEXTERITY

holds any necessary relation to general intelligence or virtue. It does not appear to be necessary to prepare the individual to pursue his disciplinary studies with greater facility, or to enter upon the race for life with the ability to acquire for himself the highest order of either professional or industrial skill. A distinguished president of an industrial institution recently said: "I do not find that the exact construction of a box leads to the exact construction of an English sentence. I have not found that students in mechanical courses were especially good in their mathematical work." Is it not possible in these materialistic days that we push the methods of the laboratory too far? May not the gross and material concepts gathered in the shop so stand as to obscure the clearer and more exact intellectual concepts?

What changes do we need in the conduct of the public schools that they may do their own work in the productive manner? If it is true, as affirmed, that the children are not able to do any independent work when they leave the schools, it is because they were not permitted to work independently in their class exercises. A skilful analysis of the mind of a school graduate will expose the processes to which it has been subjected during the periods of its tuition. In the examination we should inquire for the nature of the knowledge acquired, and for the kind of training the faculties have received. Pupils who have been brought up on books alone will show when they take their places in the world that the world is a new object of thought. Books are said to be the storehouse of knowledge. By which is meant the signs of knowledge, for knowledge itself is nowhere outside of some mind, and the signs of it can be interpreted by those only who already know what they signify.

From these statements it will appear that in the acquisition of knowledge words were never intended to take the place of things. When used exclusively in schools they seem to

CLOSE THE SENSES

and the understanding against the true objects of knowledge, and the individual passes through the world without seeing it. If we turn our attention to the effect on the mind produced by the abstract use of language in study, we shall find that such a use is adapted to cultivate the passive powers only. The mind is active in receiving effects whenever it uses language as a substitute for objects and occasions for ideas. In such a case, its labor is simply to discover the ideas invented by other minds. The result of such an exercise of the faculties is to prepare them to obtain information rather than knowledge; to feel impressions, but not to produce them; to be controlled, but not to govern; to imitate the acts of others, but not to invent an independent course of conduct. All this is changed when things take the place of words. Then the mind becomes conscious of knowledge and of obtaining it by its own efforts. Under a system of objective teaching the learner is brought in direct contact with whatever he is to know, with natural objects, language, abstract truth and states of mind. These are all made objects of consciousness as a condition of knowledge, and the pupil in this way becomes an original investigator. We already have two exercises in the schools that are adapted to train the mind to a skilful use of the eye and hand. I refer to drawing, and to the practice by the pupils of constructing their own simple illustrative apparatus. Drawing is the language of form, and may take the place of written speech as a mode of expression. It implies a careful and prolonged observation of things to be described. It presents occasions for free exercise of judgment, imagination and invention. It is one of the best means of cultivating the taste by requiring that exercise of the faculties upon which the activity of taste depends, and by directing attention to the beautiful in the works of nature and art. In constructing the means of physical phenomena to be observed, the mind is most thoroughly exercised in the

STUDY OF THE PHENOMENA

themselves. The exercise of making the apparatus is not now a simple imitation of a few mechanical motions. It is an invention of the means of illustrating ideas, and of bringing the forces of nature into a convenient form of a prolonged and systematic observation. The object of public school life, then, is not to teach special professions nor occupations nor trades, nor those exercises which produce mere manual dexterity, but to develop the child and bring him to his special work with trained faculties and an honest purpose. After the powers are sufficiently unfolded and good habits are formed, and independent ability to acquire knowledge from the study of things, and information from communication with other minds has been acquired; after the foundation for a true manhood has been established by the disciplinary exercises of the public school, then let the technical and industrial schools offer to all who desire the opportunity of preparing for special places in life. The public common schools of the country must not be confused and burdened unnecessarily with the work of the home or of society or of the church. Theese schools will fail of accomplishing their purpose, and will have their hold on public confidence weakened if they attempt to teach that knowledge which is not desirable for all to know, or to produce that cultivation which is not necessary for all to acquire. The common schools are necessary for the state, special schools for the indivipual. The one should be made universal, and the attendance upon it compulsory; the other should be offered to all who desire to enjoy its advantages. Let the work in the public schools, as they are now organized, be done in accordance with the true philosophy of teaching and study, and the children may graduate from them prepared to enter, with every prospect of success, upon the performance of the duties of either public or private life. [Applause.]

MR. SEAVER'S REMARKS.

General Francis A. Walker then introduced Mr. Edwin P. Seaver, Superintendent of the public schools of Boston, as one who, perhaps, held somewhat different views from Mr. Dickinson on the subject of manual training. Mr. Seaver did not understand that he was expected to reply to a paper by the Secretary of the Board of Education. I will only call attention, said he, to one distinction which may be drawn, and, if it is kept in mind, I think it will be found that the Doctor and I do not differ so very much, after all. I would suggest that manual training be introduced after a boy or girl has passed beyond the age of 14 years. When a boy or girl has reached and passed beyond the age of 14, isn't it a good idea to do something to fit that boy and girl for their future lives? Put the boy at a trade and teach the girl to do domestic work. If we lay down the distinctiou between those below and those above 14 years of age, I do not think there will be so great a distinction.

INDUSTRIAL TRAINING FOR GIRLS IN BOSTON SCHOOLS.

I propose to show in the few words I have to say what is now being done in the Boston schools, and suggest what I should be glad to see adopted. There is now some good training for domestic industry in the sewing and cooking taught to the girls. For several years sewing has been a regular school exercise in the three lower grades of the grammar schools. A girl living in Boston can hardly reach the age of 14 without having passed through at least one of these grades. Most girls pass through all three. In two schools—and soon we shall be able to say in three—the instruction in sewing is continued in the upper grades, and there includes the cutting, fitting and finishing of various garments.

Another domestic art, the ignorance or neglect of which entails much unconfessed misery or visible wretchedness, is cooking. A number of cooking schools have been established for the benefit of the older girls, and they have proved very successful. The idea is popular; the school authorities are interested and have, in fact, established one school to be supported by public money, and expect soon to provide for the support of others in the same way. There are now about 1000 public school girls receiving instruction in cooking. At the Tennyson street school there are 300; North Bennet street, 150; South Boston, 400, and at Jamaica Plain, 150.

There are those who see nothing intellectual in work with the hands, and would therefore give no place in the schools to industrial training. On this I join issue, and say that industrial training consists simply in bringing the mind to bear on hand work; and that is the very reason why it may properly have a place in schools. Industrial training is intellectual or nothing. With proper attention to cooking lessons, a girl gains not only good intellectual and moral training, but she becomes a good cook and an excellent manager of the kitchen. Some lessening of the "book time" there must be, and some diminution in the amount of book knowledge acquired may result, but this loss I do not regard as serious. I consider, therefore, that the scheme of giving industrial training to girls is neither revolutionary nor expensive.

THREE FUNCTIONS OF THE MANUAL TRAINING SCHOOL.

The question of industrial training for boys is neither so easy nor yet so far advanced toward a solution as is that for girls. It is proposed that a general course of training be instituted, calculated to bring out the mechanical aptitudes of the boys and prepare them in a measure for many industrial occupations. As preparation for prolytechnic schools, the value of manual training is rapidly coming to be recognized. These three functions, then, the manual training school seems fitted to discharge: First, to give a good ground training for those who wish to become skilled artisans; second, to give a good preparation for entrance to polytechnic schools; third, to give a good training for general purposes.

Persons familiar with the needs of boys in our cities and large towns are looking with hope to manual training for a solution of some serious difficulties. The ways to many skilled handicrafts are practically closed, and it is next to impossible to serve a proper apprenticeship. The conditions of employment are such that a youth cannot hope to become an all-round workman, but must remain a one-process man. Almost all the positions in highly skilled labor in New York are filled with foreign workmen, because Americans are not well enough trained manually to perform that labor. The plan of a manual school came from abroad, but it has been modified until it now suits American ideas. In Baltimore, Toledo and Philadelphia the manual training schools are a part of the free public system. The proposal for a manual training school is not revolutionary, it is evolutionary. But, unlike the sewing and cooking, schools for boys will be somewhat expensive. This in itself is enough to explain why Boston has been less forward than Philadelphia.

I shall not, however, cease to cherish the hope that the boys of Boston may have such a school as I have suggested. Whether it comes by action of the city government or by voluntary gifts of public spirited citizens, matters little, provided the means and equipment be ample for the training of some 300 school boys. [Applause.]

Other speeches were made by Mr. Robert Swan, master of the old Winthrop school; Mr. Atkinson and Gen. J. F. Marshall.

At a subsequent meeting General Francis A. Walker read a paper in reply to that just given by Dr. Dickinson. The following extracts from General Walker's paper are from the pamphlet copy subsequently published:

(c) *A PLEA FOR INDUSTRIAL EDUCATION IN THE PUBLIC SCHOOLS.*

By Francis A. Walker, LL.D.*

Those of us who attended the Conference of Jan. 20 heard some very strong arguments presented by the learned Secretary † of the State Board of Education, in opposition to the general views and purposes entertained by those who favor the incorporation of more or less of so-called Industrial Education with the public-school system of the Commonwealth. While objections from such a source could hardly be welcome to those who are deeply interested in the projected reforms, there should yet be no resentment at their being offered. If our purposes and plans are in general sound and wholsome, they will bear challenge and criticism, and be the better for it. Discussion, direct, sincere and earnest discussion, is in the interest of the very cause itself; and the sharper the challenge, and the more cogent the presentation of any and all objections, the better for us, if indeed we are right on the main issue.

Especially is it the duty of the Secretary of the State Board of Education to stand up for the integrity and purity of the schools of Massachusetts, if he deems them threatened from any quarter ; and in his main contention, Dr. Dickinson is unquestionably right. The primary purpose of our public-school system was education ; and it cannot in any considerable degree be made to serve any other purpose than education, without a perversion of agency, and almost an abuse of trust. The good old principle that education, so far as the public-schools are concerned, should be general, not special ; should be liberal, not technical ; should be directed to the complete and harmonious development of the faculties of the child, and not to the mere acquisition of arts and knacks which can easily be turned to practical uses,—this principle I believe to be as true and as important to the integrity of our school system, as at any time in our history.

And I must beg you to excuse me for going farther and for saying frankly in this presence, remembering that I am addressing a Conference of Charities, that the public schools should be expected to do little directly in the way of relieving the community from the burden of pauperism. The best which the schools can do, for the interests which you have so much at heart, is to perform their proper educational work with thoroughness, with efficiency, with enthusiasm. While I am far from saying that no burden should be put upon the public schools, for the general good, yet I believe that the principle which has been laid down should be strongly adhered to, in good faith and good feeling; and that those who propose any exception thereto should be required to prove their case, against a strong presumption in favor of the purely educational character of all school work.

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* A Plea for Industrial Education in the Public Schools. Addressed to the Conference of Associated Charities of the City of Boston, February 10, 1887, by Francis A. Walker, Boston: Cupples, Upham & Company, *The Old Corner Bookstore*, 283 Washington Street, 1887. Pp. 34.

† Hon. J. W. Dickinson, LL. D.

While thus amply conceding that which Dr. Dickinson claims, regarding the proper purpose and scope of our schools, issue may fairly be taken with him as to the educational character of the proposed new studies and exercises.

THE SCHOOLS OF FORTY YEARS AGO.

In order to clear the ground for such a discussion, it may appear not pedantic and not unreasonable to go back thirty or forty years in our history. Perhaps, also, it may not appear impertinent to offer here a piece of personal experience. I entered the schools of Massachusetts at four years of age, and left them at fifteen to go to college. In all the interval I do not remember ever to have been set to any study or exercise which I could not have done just as well if born without hands, except solely for the convenience of holding a book and turning over its leaves, or of writing on paper, slate, or blackboard; which I could not have done just as well if afflicted with total blindness, except solely for the greater difficulty of learning lessons by having them read to me, instead of reading them myself out of books; indeed, but for this, a blind boy would have had an advantage over me, as being less subject to have his attention distracted by surrounding objects. I do not recall any exercise which I could not have performed equally well without the use of hearing, except only for the purposes of communication with the teacher; and, indeed, a deaf child would, but for that, have had an advantage over me, as being less subject to interruption or distraction from without.

Now, who will say that there can be a complete education of the child where the senses are thus neglected? Let us not, even for a good object, exaggerate the part performed by the perceptive powers, but we may rightfully insist that there should be, in every day and in almost every hour of school life, exercises which call the senses into active operation, and hold them in strict attention, while from above, the mind, their master, guide, and helper, observes, records, and interprets all that the senses have to tell.

But this was not all that was lacking in the old education. While the memory was fostered into an abnormal and monstrous growth, nothing was offered which even tended to train the judgment. Indeed, the enormous body of facts which the pupils were expected to receive and cherish, solely upon the authority of others, constituted a direct discouragement to the faculty of judgment and to the spirit of self-reliance.

Moreover, there was absolutely nothing in the school studies and exercises of those days which tended to direct and develop the executive faculty; the power, that is, of doing things, as distinguished from thinking about them, talking about them, writing about them. No one familiar with the laws of mind will be disposed to deny that there is at least a tendency, in the protracted study of any subject, apart from putting that study to a practical use, toward producing a partial paralysis of the will, shown in a disposition to procrastinate, to multiply distinctions, and to stand shivering on the brink of action. Finally, and worst of all, the school studies and exercises of that age gave no play to that constructive passion which is inherent in every healthful child's mind — a passion which is so strong that it is readily perverted, through lack of opportunity and exercise, into the passion for destruction, just as every good thing is susceptible of perversion into an agency of evil or mischief. When, in 1843, my father for the first time visited Europe, he brought home with him a box of toys, which bore this inscription:—

> Boys in Holland love to make
> What boys in England love to break.

It is only fair to say that the boy who breaks is the same boy, ill taught and ill trained, as the boy who makes; and that the boy who breaks most is the boy who, if his energies were properly directed, would make most.

HOME WORK IN THOSE YEARS PROVIDED PLENTY OF PHYSICAL EXERCISE.

Such was the New England school of forty and thirty years ago; but the results, in education, were not as bad as might be conjectured from this rude description. A great majority of our people lived in isolated farmhouses, or in small villages, where access to the land was easy. Out of school, every boy had his stint of work, and his opportunities for play in the barn, over the fields, through the woods, where his senses were continually quickened, the faculty of judgment called into exercise, the executive power strengthened, the constructive passion given scope and swing. By these means, accessible to all, much was done to supply the deficiencies and to offset the evil tendencies of the strictly school education. It would be idle to say that the senses, the faculty of judgment, the executive power, the constructive passion, can be as fully and as harmoniously developed and trained in unregulated play, or in ill-regulated and unsupervised work, as they might be in well-considered studies and exercises directed by capable teachers; but, clearly, what the boys of forty and thirty years ago enjoyed in this way was vastly better than nothing.

This last, namely, nothing, is about what the greater part of the boys of to-day enjoy in these respects. The majority of our people now reside in cities or large towns. The boy, when out of school, can no longer resort to the carpenter's bench in the barn; for there is no barn, not even a wood-shed,—only a coal-cellar. He may at times be found in a vacant, unfilled lot, having a very poor time playing a very poor game of ball; now and then he may make a laborious expedition to some park or skating-pond for amusement: but during the most of the time he has no resort outside the house except the sidewalk.

SIGNIFICANT CHANGES IN INDUSTRIES AND IN POPULATION.

Even in the country the state of things has greatly changed within the last forty and twenty years. Formerly the population was almost entirely of native New-England stock, possessing wonderful dexterity, great inventive power, and a mechanical insight which amounted to genius. At the same time, the mechanic arts, and even the factory industries, were then carried on in such a way that almost every person employed might be regarded as a skilled workman. How great the change! To-day these regions are peopled by tens of thousands of Irish and French Canadians, who have inherited little mechanical insight, and almost no inventive power, and have themselves had small training in the arts of industry. The specialization of manufactures has been carried so far that, in some departments, an operative often need not be a mechanic in any sense of that term; using only a single tool, and performing only a single simple operation, from one year's end to another. Even the mechanic arts have been differentiated, until individual skill has largely gone out of them. * * *. Moreover, the general adoption of drawing, as a school exercise, is doing much to quicken the geometric sense of the pupils, to cultivate their perception of form, and to stimulate the interest of large classes of children who find little to enjoy in the traditional studies of grammar, arithmetic, and geography.

THE PROPOSED CHANGES IN METHODS CONTRASTED WITH THE EXISTING SYSTEM.

It is at this point that we part company with Dr. Dickinson. He would trust to the continued use of drawing, and to the increased use of science-teaching, to train the senses, to cultivate the habit of observation, to strengthen the judgment, and to make the hand and eye more ready and faithful servants of the mind. The use of tools he deprecates as injurious to the proper purposes, and as disparaging to the dignity of the public schools; while he admits sewing and cooking only as burdens which the schools may be asked to carry for the general good. Most of us, on the contrary, believe that the use of tools in appropriate form and degree, and the teaching of cooking and sewing, are as truly educational as any, even the most approved, of the familiar features of the public school; that they supply desirable elements which can be obtained at all, or which can be obtained as well, from no other source; and that they are not only compatible with the integrity and dignity of the school-system, but that they promise greatly to increase the general interest in the schools, if not to become the very salvation of the school-system itself; while the incidental advantages resulting therefrom, in raising the industrial quality of our people, in creating respect for labor, in quickening the sense of social decency, in securing a greater economy of the means and the resources of the very poor, and in promoting good citizenship generally, are, as we esteem them, beyond all price.

LIMITATIONS TO INFLUENCE OF SCIENCE TRAINING.

First.—While it is freely and gladly admitted that the objective study of natural science, by modern methods, affords an admirable training of the powers of perception, of the habit of observation, of the faculty of judgment, it cannot be claimed that it does any thing towards directing and strengthening the executive faculty, which is so important a factor of success in life; or that it gives any scope or play whatever to that creative or constructive passion, which is the highest and most useful instinct in the child's mind, but is readily perverted into a force for evil.

INSPIRITING INFLUENCE OF MANUAL TRAINING.

Second.—While the effect of science-teaching in grammar schools, is, theoretically, what has been above admitted, I believe it to be true that it is much more difficult to obtain good, fresh, original, spontaneous work in this direction, than can be had in school exercises of the character we are proposing; and that, even when the best of teaching-talent can be secured, a smaller proportion of pupils will have their interest fully aroused, and their mental activities fully enlisted, by the study of natural science, than by exercises in the mechanic arts, where the perceptive powers and the faculty of judgment are equally called into use, but where, also, the creative or constructive passion is brought into play, to furnish both object and impulse to the youthful student.

INDUSTRIAL EDUCATION INCREASES RESPECT FOR LABOR.

Third.—While the objective study of natural science tends strongly and tends directly towards moral earnestness, simplicity of character, and intellectual truthfulness as contrasted with the cultivation of mnemonics, dialectics, and rhetoric, it cannot, I think, be claimed that it has any immediate and direct influence in removing that snobbishness of feeling, and that dislike and contempt for manual labor, which are so unhappily prevalent among our half educated classes; which are so injurious industrially, so dangerous socially and politically, and which bear an enormous annual crop of ruined lives in the case of tens of thousands of the graduates of our public schools who have been made too fine for manual labor, without having become qualified to take any higher or more useful places in the industrial order, and who thus come to swell, each year, the throng of useless and unhappy applicants for the comparatively few positions in shops, stores, and counting-houses, where a generally poor living may be obtained without soiling the fingers.

On the other hand, no one, I think, can look upon a class of bright young boys, working at the carpenter's bench or around the blacksmith's forge, their paper caps upon their heads, leather aprons and jean overalls protecting their better clothes, their faces flushed with the excitement and delight of construction and creation, without having his heart glow within him at the spectacle, and without the serious conviction that this is as it should be; that it is good for these boys, and good for the State, that they should learn to do such things, in the name of education, and under the authority of the Commonwealth.

VALUE OF THIS TRAINING TO THE COMMUNITY.

Fourth.—When we come to the advantages to be derived by the community at large from the improvement in the industrial quality of its citizens, through the mechanical education of the whole body of our youth, and their acquisition and mastery of the elements which underlie all mechanic arts, we reach ground made so familiar by recent discussion that it only requires mention in passing. To the industries of New England in especial, this is a matter of transcendent importance. With a harsh climate and a sterile soil, producing few of the materials of its own manufactures, importing its cotton, wool, silk, and flax, without ores of the useful or the precious metals, without even coal for power, New England must rely, for its continued supremacy in manufactures, upon the skill, energy, and foresight of its employing class and upon dexterity, neatness of manipulation, care of materials, and mechanical aptitude, on the part of its laborers. We cannot afford to tolerate a generation growing up, as Governor Ames has said in his inaugural message, in ignorance of the use of tools.

INCIDENTAL ADVANTAGES.

Fifth.—Among the incidental advantages to be expected from the introduction of the proposed studies and exercises into our public schools, is one which has always seemed to me of great importance, but which is seldom alluded to in discussion of this subject; namely, the maintenance of that sense of social decency which was once of so strong a savor in the life of New England. No one can pass through any of our villages to-day without being painfully struck by the contrast there afforded with the villages of a generation ago, when, almost without exception, every house was in order and in repair, the fence entire, the gate hung, the shutters in place, the sash fully glazed. Around the house the ground was graded and grassed, and almost everywhere some little garden-patch testified to the universal desire to have things neat, agreeable, and decent. The man then who kept his house and grounds squalid was little less than a public enemy. I need not spend words in showing how great is the contrast in many of our New-England villages to-day. The men, who, on every hand, allow their premises to remain shabby and squalid, a reproach and blemish to the street, receive higher wages than our fathers ever dreamed of. The reason why they are content to live amid such miserable surroundings is because they have come from lands where nothing better was known, and, secondly, because they have not the dexterity and knowledge of the use of tools, which would enable them to do those simple jobs of construction and repairs which were to our fathers a matter of course. If we are to reform this state of things, which is alike disgraceful and dangerous, and are to bring about a gradual return to that better and happier condition when a strong sense of social decency, inspiring and controlling all the members of the community, constituted the best possible guaranty of peace and order, of industry and frugality, we must teach the children of these men the use of tools; and we can do it in no other way than through the public schools.

INDUSTRIAL EDUCATION OF GIRLS.

Sixth.—On the subject of sewing and cooking, there are many who can speak with much more of intelligence and of authority than myself; but I yield to no one in appreciation of the importance of these exercises, as an integral part of the authoritative curriculum of our schools. So vast appear to me the advantages, social and physiological, to be derived from this source, that, were these exercises in no sense and in no degree educational, I would still lay this duty on the schools, as a burden to be carried for the general good, and would employ the authority of the Commonwealth to train every girl within our borders in these all-essential domestic arts.

If, as Horace Mann said, it is a crime for a boy here to grow up in ignorance of reading and writing, what sort of an offence is it, pray, for a girl here to grow up in ignorance of cooking and sewing? Think from what kind of homes tens of thousands of our children in the public schools every morning come,—rooms disordered and ill-kept, amid foul surroundings, presided over by a mother who cannot decently patch or darn a garment that is beginning to give way, and who only knows enough of cooking to take the perhaps abundant materials supplied her, and render them, by dirty and wasteful processes, into disagreeable and indigestible messes, productive of dyspepsia and scrofula, and provocative of a craving for strong drink. As a mere matter of public safety, can we afford to breed such a population in this Republic?

But, in fact, cooking and sewing in the public schools can be made, and, so far as they have been carried, have been made, as truly and as strictly educational as the three R's of the primitive school house. Can any one look into the rooms of the Winthrop School, when sewing is going on under its wise and benign master,* without seeing that the powers and faculties of the children are most actively and harmoniously developing; that character is rapidly and happily forming, as hand, eye, and brain work together, all inspired by the acute delight which the child always feels when creating something useful or beautiful; that, in a word, education in the largest and best sense is here taking place? Can any one look into the Tennyson-street cooking-school, without seeing, in the care and economy with which fuel and materials are used; in the order and neatness which pervade the room, not less the cupboards and lockers than its open parts; in the reasoning which precedes every operation, and the subsequent explanation of effects by well-approved causes, an example of the very best kind of education?

INCREASED INTEREST IN THE SCHOOLS DUE TO THIS MOVEMENT.

Seventh.— * * * . However strictly we may hold to the doctrine that the sole sufficient justification of school exercises is found in their educational character, we cannot deny that the maintenance of the schools themselves, and their ample endowment and support, are considerations which may properly, and which properly should, be admitted to qualify, so far as occasion exists, the organization of schools, and the curriculum of their studies.

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* Robert Swan, Esq., to whom Boston owes a debt it can never pay, for the part he has taken in introducing sewing in the public schools.

I heartily believe that the introduction of the mechanic arts, and of sewing and cooking, into the public schools, will do much, very much, not only to increase the interest of the pupils in their work, as has been already indicated, but to win for the schools a far larger degree of interest on the part of parents, and a far heartier support of the system on the part of the general community.

DANGERS MENACING THE COMMON SCHOOLS, ARISING FROM DIRECT OPPOSITION AND FROM INDIFFERENCE.

Indications are not wanting, that powerful elements of hostility are beginning to array themselves against free public schools, with compulsory attendance, maintained under the authority and at the expense of the State; while, perhaps more dangerous still, appear signs of disaffection and indifference among vast numbers who have no reason to be actively hostile. I believe that nothing will go so directly to the root of this evil, as the reforms which this meeting has been called to consider: and that not less for the schools themselves than for the scholars, will there be found great virtue in the admission of the elements of industrial education into every school house of the State, however humble, and however remote.

The following is the newspaper report of the meeting before which the address by General Walker, just quoted from, was delivered.

Dr. Samuel Elliot called to order yesterday afternoon a meeting of the Associated Charities at the Institute of Technology to listen to a discussion of the subject of "Industrial Education in the Public Schools." President Walker was the first speaker.

This report of General Walker's remarks is omitted, as the quotations from this address have been just given from his published pamphlet. After giving an abstract of President Walker's remarks the Herald report proceeds to give those of the other participators in this discussion.

(d) "*INDUSTRIAL EDUCATION IN OUR PUBLIC SCHOOLS.*"* *MR. EDWARD ATKINSON REPLIES TO DR. DICKINSON.*

President Walker was followed by Mr. Edward Atkinson, who criticised the recent address of Secretary Dickinson of the State Board of Education. Mr. Atkinson said: I defer with great respect to his position and to his judgment; he has had very much greater experience in the matter of school instruction than I have myself; but it may happen that I have had more experience in watching the application of that which has been taught in the schools to the daily work of life than he has, and that I can judge as well as he the difference between instruction and education. With all due deference to his judgment, I submit that he has set up a shadow which he has straightway proceeded to demolish, and that he has missed the two most important points which are at issue. In the opening of his address he says: "Some affirm that the public schools have failed to accomplish their purpose unless they have prepared the children for their *special* places in life or have trained them in some of the *special* applications of their active power." Later he defines what he means by this sentence by saying: "If it is the function of the public school to prepare the children for some special mode of gaining a living, this would graft upon our common school work the professional and industrial elements, and the schools would be no longer common schools. The next generation would be composed of citizens who might practice and pursue *the trades* with special skill; but all would be done with special reference to supplying the wants of life.

I know of no intelligent advocate of manual or industrial training who would not

SCOUT WITH CONTEMPT THE VERY IDEA

of converting the common schools into trade schools, or into merely special schools of any kind.

Dr. Dickinson's most excellent definition of education is this. "In the general education of each child he should be considered an end unto himself rather than an instrument for the production of some end outside of himself, which would direct him to those exercises which have a tendency to produce a symmetrical development of all his faculties."

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* See Report in Boston Herald of February 11, 1887.

But it is not only theoretically but practically, true that there are boys and girls who may have more brains in their fingers than there are in their heads, or whose true brain cannot be reached by the ordinary methods of teaching from books, by text book instruction, by memorizing, or even by object lessons; they must touch, test and handle the subjects through which medium instruction is to be given to them. Who among us does not know individual boys who have been held to be dull, stupid, unteachable, until by way of manual instruction the way had been opened to reach their intelligence, and who have thus been developed not into instruments, serving simply personal needs, but into men of the most valuable and useful kind, holding high place in the community, and serving others even more than they serve themselves?

The other point, which it seems to me that Dr. Dickinson wholly missed, is the simple fact that the common schools cannot be made use of by the vast majority of boys and girls for the development of what is called the higher education, but must be made use of, whether we will or no, under the present narrow conditions of life, to fit boys and girls for the places which necessity will require them to occupy when they begin to get their own living, or to aid their parents in supporting them.

THE KNOWLEDGE MOST ESSENTIAL FOR THE GREAT MAJORITY OF PUBLIC SCHOOL CHILDREN.

Now, what do we find to be the facts? I do not know what the exact statistics prove, but I suppose there is not one boy or girl in 100 of all who are taught in the common schools who can afford to stay in them long enough to pass through the high school. What I do know is this: that while the average family in the United States numbers five persons, one in every three is at work for gain, and the work of more than 1,100,000 children was required in the year 1880 even for the attainment of the moderate condition of welfare which then prevailed throughout this country. What these children need is not accomplishment, or the direction of the schools toward the higher education, as it is called; what they need most is not to cram them with useless knowledge, but to develop capacity, aptitude, ability, gumption, so that they can make use not only of the head, but of the hand also, under the direction of a well trained eye. For the very reasons by which Dr. Dickinson justified object teaching in the schools, may the true method of manual training be even more fully and completely justified.

THE GREAT TROUBLE

has been, until very lately, that from the Secretary of the Board of Education down through the teachers of the high schools, of the grammar schools and of the primary schools, there was no one who knew how to do it; and it is only within a very few years that a few have learned how.

I suppose that the figures would show that even as 90 per cent. of the population of this country occupied for gain must mainly depend for their welfare upon the power of using their hands in their application either to machinery, to tools or to the handling of the goods and wares which are dealt in — so, also, more than 90 per cent. of the children who begin in the common schools must leave them either before or at the end of the grammar school course, from necessity and not from choice. Think of the insignificant fraction of those to whom the higher education of the university or of the technical school is possible; then consider the vast proportion whose power to sustain themselves after they leave school must be, in part at least, developed in the school, and may even be marred if the direction of the school is not the right one: then, remembering that the world is always within one year of starvation, and within two or three years of being naked, shall we not devote a part at least of the time of the school to preparing men and women to feed the hungry and to clothe the naked.

I trust that those with whom the influence of Dr. Dickinson may rightly be very great, as well as he himself, may ere long more fully comprehend the object of industrial training and of manual instruction in the schools, and will look at it all round before they condemn it, or use their influence to retard its progress. It is a grave misfortune to the cause of true education that the Secretary of the Board of Education of the state should so completely misinterpret the object aimed at in this discussion.

After a few remarks from other speakers, this meeting adjourned.

IV.

MANUAL TRAINING SCHOOLS.*

THE OBJECT AND BENEFIT OF WORKSHOP INSTRUCTION, BY SUPERINTENDENT E. P. SEANER.

The monthly meeting of the Boston Trade Club was held at Young's Hotel last evening, and was rendered especially interesting and significant by the reading of a paper on "Manual Training Schools" by Supt. E. P. Seaver of the Boston public schools. Among the prominent gentlemen present were Prof. C. R. Cross of the Institute of Technology, Gen. Hobart Moore, W. A. Couthouy, Hon. C. A. Campbell, H. H. Merriam, W. W. Rawson, Dr. A. M. Dudley, Dr. L. D. Shepard, N. P. Beaman and James Munroe. After justice had been done to an excellent dinner, President L. G. Burnham introduced Supt. Seaver, who spoke as follows:

A manual training school is a sort of high school for boys, in which the workshop shares with the recitation room the time given to instruction. Intellectual development is sought not only through the usual study of language and science in books, but even more through the use of the pencil in designing and of tools in executing various forms and constructions in wood, iron or other material. It is the active or practical side of the mind that is chiefly brought into play by exercises of the latter kind. The aim is to bring out the mechanical aptitude of the boys, and thus to secure for them a more symmetrical training than book studies alone would afford. Mere manual skill — that kind of automatic power which comes from one operation or set of operations oft repeated for a long time — is not the kind of skill sought to be cultivated, as some have mistakenly supposed. It is rather that higher kind of skill which consists in the application of thought to the work of the hand. In so far as thought is brought to bear on hand work does that work cease to be drudgery and the worker an automaton. With observation, judgment and reason all awake he becomes mentally absorbed in his work; he plans, improves, beautifies and invents, he is no longer the mere artisan, but becomes conscious, in a degree, of the motive and feeling of the true artist. There is

A NATURAL TENDENCY

in most minds — often very strongly marked in boys — to seek development on the active side by exercising the perception, the judgment and the will through the eye and hand as instruments. "Manual labor," said Emerson. "is the study of the external world;" and Lord Bacon described it as "making the outward show of things conform to the desires of the mind." It is precisely because the proposed manual instruction is chiefly intellectual that it is hardly less beneficial to those who are not going to become artisans than it is to those who are. This is the theory, and the experience is showing the theory to be well founded.

THE ANALOGY BETWEEN LABORATORY AND WORKSHOP INSTRUCTION.

Consider for a moment the principle involved in this workshop instruction. It is the same principle that underlies the modern laboratory — methods of instruction in chemistry, physics, biology and other such sciences. No college, technical institution, or high school even, is thought to be properly equipped for its work unless it has laboratories, in which the students of these sciences may do the observing and the experimenting mainly for themselves. It is no longer supposed that science can be imbibed by reading or hearing statements of others, or witnessing the brilliant performances of clever lecturers. All this is good in its way. Very interesting and useful, usually, is the information so gained; but such information is not real knowledge, and, therefore, not science. To gain real knowledge, the mind must be brought to direct personal experience with forms of matter and manifestations of force. This is what the laboratory does, and this is what gives laboratory methods their great educational efficacy and value. Now, laboratory and workshop are the same word, and have the same meaning fundamentally. When it was discovered to be necessary to give students in civil and mechanical engineering some preliminary knowledge of the materials and processes they would have to deal with professionally, the method of instruction chosen was the laboratory method, and the result was a generalized mechanical workshop presided over by a professor of mechanic arts. This was the origin of the school of mechanic arts in the Massachusetts Institute of Technology in this city, and of its Russian prototype; and this is the leading idea of the manual training schools which have sprung up in various parts of the country during the last seven or eight years. Given a man who is a true teacher to preside in the workshop, and the whole work becomes educational, and the place a school. It is no matter for surprise, then, if this workshop instruction is found to be good for purposes other than those originally contemplated. The coarser materials, implements, and operations of the workshop afford excellent means of preparation for the finer processes of the scientific laboratories later, whether these be in the polytechnic school, the college, or elsewhere. It might seem like taking high ground to say that the workshop should furnish a part of

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* From "Boston Herald." February 4th, 1887.

EVERY BOY'S FITTING FOR COLLEGE,

and yet such a position would be not without good reasons to sustain it. Among the 100 graduates of the St. Louis Manual Training School whose occupations (December, 1886,) were known, there were 29 who were students in higher institutions of learning; 16 of these were students in technology, 10 were general students in colleges, two were medical students and one was a law student. These facts show that the manual training school has been used to some extent as a factor in general education. This appears still further in the fact that the 100 graduates just referred to include 24 who were in mercantile pursuits, mostly as clerks, and who appear to have used the manual training school as a substitute for the ordinary high school.

THE VALUE OF THE TECHNICAL FEATURES OF THE MANUAL TRAINING SCHOOL.

Thus far we have kept in view the general educational character of the manual training school, and have outlined the function it may be expected to discharge when used for general purposes. But let us turn now to the most important special function such a school would have in any large city at the present time. The manual training school seems to be the most promising substitute yet devised for the apprenticeship of former days now so much fallen into disuse. Among the boys to-day growing up in the city there are many who will become artisans. Their number will exceed that of the boys who will become professional men of any kind. Now, whether these boys become artisans of greater or less skill, whether they understand their craft so as to direct others, or, failing, must submit to the guidance of superiors, whether they may aspire to the higher or must be content with the lower rewards of their labor, all this will depend on the kind and amount of education they can bring to that labor. The schools do much for those who will enter the professions. Can they do more and better than they are now doing for those who will become artisans? It is not a question of making artisans of those who would not otherwise be such; but it is a question of better preparation for those who will be such in any event. Now, there are many who will say, Give your future artisans a high school and a college education. There is, they say, one course of studies — the humanities — which is best for all to pursue, to the end, if possible, and if not, then as far as may be. Without pausing to refute this one-sided view, or even admitting the excellence of the road thus pointed out, it is enough to remember that the road is far too long, and the journey too costly in time and money for most boys to think of starting upon it. The problem is simply this: Given a hundred boys and three years of time, say, from 14 or 15 to 17 or 18 years of age, to turn them out at the end of the time with the maximum of preparation for skilled handicraft. Experience is beginning to show that the best solution of this problem is to be found not in classical high schools and colleges, not in any school devoted to book work alone, but in the manual training school with its union of

BOOKWORK, DRAWING AND SHOPWORK.

Out of the 100 graduates already referred to, there were (December, 1886,) 32 at work in trades, for which their three years' instruction in the manual training school had been a direct preparation. Some were working as journeymen, others, although still quite young as foreman. Among them were 18 mechanics (mostly machinists), 5 farmers, 5 draughtsmen, 3 architects, and 1 practical electrician. To these might be added some of the clerks above referred to as engaged in mercantile pursuits, for they were holding positions in which their mechanical knowledge must be specially useful. If to these we add nine graduates who were engaged in teaching the mechanic arts in other manual training schools the result is that nearly one-half of the graduates of one flourishing manual training school were prepared to enter at once into paying occupations, with a comfortable propect of reaching the better positions in their respective trades — of being the leaders rather than the led.

THE INTRODUCTION OF INDUSTRIAL EDUCATION IN GIRARD COLLEGE.

An interesting piece of testimony was picked up last year by me while visiting Girard College. This great institution then contained 1135 boys of ages from 16 to 18 years. About 300 of the older boys were receiving mechanical instruction in the best equipped workshops I have ever seen. In regard to the method of instruction, let me quote a passage from the last annual report of the directors:

"The plan of instruction * * * is to commence with the draughting room, where the beginner will be required to make a drawing of some simple article or piece of machinery, which he will then take to the wood working or turning department, and as a model for the foundry, where he will be taught to cast it in metal. From the foundry he will take his casting to the metal bench, and there complete it for the purpose of its design. This finished, he will begin again with some more complicated piece of work in the draughting room, going through the same routine again and again, until draughtsman, wood worker, turner, forger and skilled worker in metal, he either goes out into the world competent to earn his living at least in some one of these employments; or if, in the judgment of the superintendent, the lad, still under the age of 18 years, is sufficiently instructed in each branch, and shows a preference to one, and has not yet found a suitable place, he may be permitted to make himself more perfect in that one which he prefers."

The directors go on to say in general: "Our introduction of this mechanical instruction seems almost providential, in view of the scarceness of apprenticeships. Up to almost the end of the year 1884 mental work alone was taught, and during that year only about one-third of the boys who left college entered into mechanical pursuits; of those who left during 1885, and since instruction in ordinary woodwork and turning has been introduced, two-thirds have obtained work in mechanical occupations."

Now, as to the

VALUE OF THIS MECHANICAL INSTRUCTION

in comparison with ordinary apprenticeship in the great machine shops of Philadelphia: One large establishment of this kind, in which five years' apprenticeship is the rule, takes the boys who have had the full course of mechanical instruction in Girard College, crediting them with three years' time on the apprenticeship. Now, this mechanical instruction and drawing in the college would not occupy, according to the best estimate that could be given me, more than 10 hours a week for three years. The average was considerably less than that. Put against this the time spent by the ordinary apprentice; call it, at a low estimate, 50 hours a week for the same period of three years, and you have the elements for a comparison. Result, the value of school instruction in mechanic arts is to that of apprenticeship as five is to one. And this is the judgment, not of theorists or educational men, but of practical business men on the basis of dollars and cents. Surely, if experience like this accumulates, we may soon reach a conclusive demonstration that the manual training school is the correct solution of the apprenticeship question. Persons familiar with the needs of boys in our cities and large towns are looking on with hope that such schools may offer a way out of certain serious difficulties. These difficulties are felt by many parents, and by some teachers who are much consulted in regard to the choice of occupations for boys. There are many skilled handicrafts, the ways to which are practically closed now, except to a favored few. There is no apprenticeship in the proper sense, and the ordinary conditions of employment are such that the youth can hardly expect to learn the whole trade. He can hardly ever become an "all round" workman, but only a "one-job man," or a mere machine tender. It is sometimes said that the American boy hates the bondage of apprenticeship, will not endure it, and so voluntarily shuts himself out from many desirable occupations. The truth probably is that the American apprentice sees quite as clearly as his master whether their relation is mutually beneficial or not. He is quick enough to see the advantages of good instruction, and to know when he is cheated out of it. So he is apt to imagine that he can better pick up a trade by working here and there than to learn it regularly by serving his time, even where apprenticeship exists. Now give this keen American boy a fair chance to learn skilled handicraft, give him the preparatory instruction of a good manual training school, and he will soon enough find his way to profitable employment.

THE IMPORTANCE TO A COUNTRY OF SPECIAL TECHNICAL TRAINING IN ARTISTIC INDUSTRIES.

Mr. Peck, the labor commissioner of the state of New York tells us in his recent report that the skilled handicrafts in that state are passing out of the hands of native Americans into those of well trained foreigners. The higher the degree of skill required and the higher the wages, the *less* likely is the workman to be an American. In some manufactories where the highest grades of skill are demanded not one American employé is found. There can be no doubt that this state of things has been brought to pass by a neglect to provide suitable manual instruction for American youth. In the countries from which these highly skilled artisans are imported, the old apprenticeship system is rapidly decaying. Already the necessary instruction has been provided in other ways. In the sharp industrial competition there going on, each nation sees very clearly that success is in the head and hand of the skilled artisan. To let his race dwindle or die out means industrial ruin. It is to be hoped America will learn the lesson before it is too late.

Mr. Edward Atkinson has lately given some striking figures to show how much better off all classes of laborers are now than they were in 1860. The purchasing power of their wages then and now has been reckoned in terms of an average daily portion of food materials, and the comparison stands thus: (*a*) For foremen, overseers and mechanics of special skill there has been a rise from 2374 portions in 1860 to 4000 portions in 1885–6; (*b*) for machinists, engineers, blacksmiths, carpenters and painters, from 1512 to 2400 portions; (c) for operatives in factories, workshops, furnaces, rolling mills, &c., from 1290 to 1800 portions; (*d*) for common laborers, from 980 to 1400 portions. All classes are much better off now than they were in 1860, but

THE SPECIAL POINT

I wish now to present is the relatively larger share in this improvement that highly skilled labor enjoys. The improvement is greater in proportion as the skill is greater. In the class of highest skill the improvement was 69 per cent; in the next class 59 per cent; in the next 40 per cent., and in the lowest 43 per cent. Facts of this kind, becoming generally known, ought to draw more youth into skilled mechanical industries, and no doubt will do so when suitable opportunities for preparation are offered them.

THE USES OF A MANUAL TRAINING SCHOOL.

There are three general functions which a manual training school seems well adapted to discharge.

1. To give a broad ground training for those who will become skilled artisans.
2. To give a good preparation for admission to higher technical and scientific schools.
3. To give a good training for general purposes.

The time in such a school is usually divided into 10 hours a week for book studies, 5 hours for drawing and 10 hours for shop work. The course should be three years long for boys of ages from 14 or 15 to 17 or 18. The place for such a school in our school system is side by side with and on the same level with the Latin and high schools. Boys would pass into it after completing their grammar school studies. Such a school Philadelphia has lately made a part of her free public school system; Baltimore did the same somewhat earlier; Toledo has one, and perhaps other places. The excellent manual training schools in St. Louis and Chicago are endowed schools, and there is a charge for tuition. Enterprising business men in these two cities, seeing the merits of Prof. Runkle's school in this city, quickly subscribed the money and established these two schools, and, further, provided some free scholarships in them. My hope is that Boston will follow the example of Philadelphia in this matter, and set up a perfectly free school for Boston boys' benefit. The next best thing would be for Boston men to follow the examples of Chicago men, endow a school and partially support it by tuition fees, which, however, should be moderate, and in proper cases wholly remissible. In either case, a great educational need of this city would be supplied.

At the conclusion of Supt. Seaver's address, Prof. Cross was introduced, and made a short and instructive address upon "The Practical Results of Electricity."

V.

MANUAL TRAINING IN PUBLIC SCHOOLS.

By Professor Thomas Davidson.

The evidence of a general interest felt by the public, no less than by the educators themselves, in the discussions of the proposed new methods of Industrial Instruction is seen in the articles relating to its various phases which are given in the public journals, magazines, and reviews of the day.

The following thoughtful article contributed to the Forum* by a well-known author and educator, is commended to all interested in the subject as containing the conclusions of a competent observer, familiar with educational theories and methods, and accustomed to consider a subject from many points of view. It is a comprehensive and suggestive treatment of the topics considered.

Professor Davidson begins by showing that the changes in the situation due to the developments of modern civilization necessitate corresponding changes in education, referring especially to broad economic considerations.

THE TERM "MANUAL TRAINING" DEFINED.

Manual training, in its broadest sense, means the training of the hand for any purpose, and extends to writing, drawing, and exercise in the liberal and mechanical arts.

Piano-playing demands an enormous amount of manual training. But, in ordinary usage, the phrase means only the training of the hand in the arts of design and of manufacture. In this sense it is but one branch in a system of practical economic education, and requires to be supplemented by others.

These remarks are in no way intended to disparage manual training but to show its proper place in economic education. Manual training is the favorite of the day, and there is no harm in this. At the same time, we must be careful not to give too much importance to it, lest we end by provoking a reaction against it, when it shall prove not to accomplish, by itself, all that is expected of it.

In any case, seeing that a very large portion of our citizens must earn their livelihood by manufacturing, and that success in this requires manual training, such training must be included in our systems of education. But it is not merely our economic system that demands manual training; our whole view of life demands it. Two things are essential to life as we conceive it — culture and freedom. Without these life is not human. Now, manual training is at once an essential part of culture and an essential condition of true freedom. It is simply the culture of one set of the active human powers. At present, even among so-called cultured people, there is a large number of manual incapables and ignoramuses, who, so far from being ashamed of their incapacity, rather look down upon those who possess manual culture, forgetting that the man who cannot use his hands skillfully is cut off from one of the most fundamental conditions of independence.

It is a settled fact, then, that manual training is demanded as an essential part of modern education, both economic and liberal. The question that remains is, How shall this training be imparted? That it will involve a considerable outlay of time and money may be regarded as certain. It will, of course, also call for a large number of teachers capable of imparting manual instruction. It does not, however, follow that we shall have to add either to our school-budget or to the number of our teachers.

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* The Forum, April, 1887.

He then refers to the complaint of "overpressure" of studies and says:

SUGGESTIONS FOR ECONOMIZING SCHOOL TIME.

But we need not add even an hour's work to that now done there, in order to introduce it. Let us do away with what is nonsensical and hurtful in our present courses, and plenty of time will be left for all the manual training that is desirable. Do away, for example, with a great deal of the arithmetic, a great deal of the formal grammar, the whole of the elocution and elocutionary reading that are now taught. Above all, do away with the whole wicked system of school exhibitions, which not only waste valuable time, but teach so many evil lessons of vanity, envy and selfishness, and whose cheap, vulgar applause so tends to unfit young people for the sober, unapplauded duties of real life. Do away, also, with the whole marking and ranking system, which goes so far to misplace the motives for study, encourages cramming and display, and occupies so much time.

If these things and others of the same kind were removed, plenty of time would remain for manual training. Nay, more, much of what would be left after such removal might be taught more readily and effectually in connection with manual training. The very learning of the alphabet ought to be made a lesson in manual training, and indeed it is so, wherever children learn the letters by writing them. Instruction in writing is manual training. We know that in the ancient world reading was taught by writing, and a great deal of manual dexterity thereby attained. But other forms of manual training might be introduced in connection with the learning of the alphabet. Children might be taught to mould the letters in some soft material, or to cut them out in paper, card-board, or wood. Again, the elements of arithmetic ought to be taught by means of an abacus, as was done in ancient times, and each child ought to be made to construct its own. Geography ought to be taught by means of map-drawing or globe-making, and so on. This method of instruction would not only impart manual training, and cultivate the active, in connection with the cognitive, faculties, but it would, moreover, be the most effective mode of teaching, insuring accuracy and retention. Indeed, there is hardly a branch of useful instruction now given in our schools that might not be imparted better by being connected with manual training. By thus connecting mental with manual training, the teacher could do away with all that is so wearisome and unwholesome in class recitations, devote special attention to each pupil, promote each as soon as he was ready for promotion, and make them all interested doers, instead of timid or vain babblers. And, even if this method should require more time than the other (which it would not), it would be quite safe to draw upon the time now devoted to mere useless play or foolishness. Play is an excellent thing, and every child ought to have a fair share of it; but there are many kinds of manual employment which might with advantage take the place of a good deal of play, and, indeed, would soon come to be regarded as the most interesting play, for example, sawing, turning, planing, carving.

SUGGESTIONS FOR OUTDOOR EMPLOYMENTS FOR PUPILS.

But the arts of primary production, especially gardening, would furnish some of the best substitutes for play, as they could be carried on in the open air. I have been in Italian schools, where each boy had his own garden-plot to cultivate and tend, and in almost every case I found the boys interested in, and benefited by, their work.

It is certain, I think, that manual training might, under judicious management, be introduced into our schools of every grade, with great advantage to the pupils and without calling for any additional time. This disposes of the first objection.

THE QUESTION OF ADDITIONAL COST, CONSIDERED.

The second takes this form. The public treasury cannot afford the means to pay for the additional school accommodation, and the additional trained teachers that would become almost a necessity, were a system of manual training introduced into the schools. Now, this is simple, unmitigated nonsense. The public could well afford three times the sum it now pays for education, and be richer afterwards. Indeed, no public money is so well invested as that which is invested in education.

AN AMERICAN MISTAKE.

It is a strange American peculiarity, however, that we are willing to invest means in anything rather than in men. The result is that we have big railroads, big bridges, big steamers, big hotels, big fires, big accidents, big frauds, big "boodlers," and little men. We have everything but the main thing.

But, knowing that the public considers anything a safer object of investment than itself, I hasten to assure it that the sums at present devoted to public education would, if judiciously applied, be amply sufficient to secure all the accommodation and all the teachers necessary for manual training.

ELEMENTARY MANUAL TRAINING CAN BE TAUGHT BY THE REGULAR TEACHERS.

In the first place, as regards the teachers: there is no reason in the world why every teacher in the schools should not fit himself or herself to impart elementary manual training. Every normal school ought to have a department of manual training, and every candidate for a position in the schools ought to pass a satisfactory examination in that branch. Teachers, above all other persons, ought to have universal culture, and of this a very essential part is manual culture. I believe that a great deal of manual training might be introduced into our school curriculum without the appointment of any new teachers, except in the highest grades, and of these I shall speak further on. So also as regards accommodation: a great deal of manual training might be introduced without calling for any more or larger school rooms. Already drawing, one of the most important branches of manual training, finds room in many schools. To be sure, it is very often badly taught; but it would not require any additional room if it were well taught. And the same is true of other branches. I have before me a pamphlet written by an Italian country school master, from which I translate the following most apposite passage:

WHAT A TEACHER IN ITALY HAS SAID.

"I am advocating a work-school, not a workshop. To turn the primary school into a training-school for mechanics would be to fall into a very grievous excess * * * Manual labor was introduced, some time ago, into the houses of correction and into the orphan asylum. Why, then, should the children in the elementary schools, the sons and daughters of those who contribute to swell the contents of the public treasury, be less expert workmen and worse educated than those miserable creatures who fill our institutions of public charity? Does not this seem a grave social injustice?

"How shall we provide tools? you will ask. How shall we fit up the workshop? Where shall we find teachers to instruct in the various mechanical arts, if we have no pecuniary means? * * * I reply: Every little workman, once in love with his work, buys his own tools, as soon as he is able to make use of them, or else he sets about persuading his parents to buy him, at one time, a file; at another, a pair of pincers; at another, a hammer; and he will find this an easier task than that of the school master who tries to persuade them to buy a grammar, an arithmetic, or a geography. And be assured that the boy, once in possession of his tools, will occupy his hands, and find work for himself. Instead of buying playthings, he will make them; and, what is more, he will not break them to pieces next day, in order to see how they are made inside. * * * For the purposes in question, the school rooms at present existing are sufficient, if only slight modifications were introduced into the desks, rendering them serviceable for work, as well as for study, as they now are in many well-regulated girls' schools. Again, the simple use of the more common implements may be taught by the common-school master, without his pretending to be either a mason or a carpenter. * * * This will answer in the lower classes. For the higher classes, on the other hand, in which the pupils will have to proceed farther in the learning of handicrafts, a separate workshop, with special teachers, will be necessary. We must erect shops as an addition to the school-building, and grant the free use of them to workmen distinguished for good conduct, morality, and ability, on condition that they teach their trades to those school-children who desire to learn them. This is already done in the boys' Orphan Asylum at Milan."*

Though these remarks are intended to apply to the country schools of northern Italy, they will, with slight modifications, apply to the city schools of the United States. Elementary manual training — not only writing and drawing, but also the use of tools — can unquestionably be taught in our present schools without any additional space or teaching force, if we will only economize wisely in other directions.

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* Luigi Poli, "Il Lavoro Manuale nelle Scuole Elementari Rurali." Varese, 1886.

To emphasize the great importance in his opinion of higher technical education Professor Davidson makes some statements that seem rather extreme; though he seeks to guard himself from the charge of extravagance in statement, by affirming that no such extreme measures will, in his judgment, be required. He, however, closes his article with a very wise caution.

WHILE MANUAL TRAINING IS DESIRABLE AND PRACTICABLE, IT IS BY NO MEANS A PANACEA FOR ALL SOCIAL EVILS.

It appears, then, that while both our modern life, as a whole, and our present economical condition demand that manual culture should form a part of our system of education, all the objections usually urged against its introduction can be readily met. At the same time, those persons who are championing manual training, as if it were the most essential part of education — as if by means of it all the ills that flesh is heir to were to be cured — must bear three things in mind: (1) that practical training is but one branch of education; (2) that manual training is but one branch of practical training; and (3) that even the most practical training cannot by itself greatly better any large number of persons, unless at the same time other conditions are fulfilled. * * * It is of the utmost importance, then, that while we seek, by every means in our power, to promote manual training, we do not allow ourselves to forget that it is but one element, and by no means the most momentous, in the solution of the great social and economic problem which now presents itself to us.

VI.

INDUSTRIAL EDUCATION BEFORE THE NATIONAL EDUCATIONAL ASSOCIATION IN CHICAGO, JULY. 1887.

INTRODUCTION.

From the official report* of the 1887 session of the National Educational Association the following account of the attention there given to the various phases of the Industrial Education movement, have been compiled. This handsome, well printed volume, of over 800 pages, is very similar in the character of its contents, to the volumes before referred to containing the account of the transactions of the International Conference on Education, held in London, in 1884. In addition to the general meetings of the Association before which papers were read and discussed, the nine special Departments which compose the Association held each their separate sessions. This volume undertakes to give all the reports made, papers read, addresess delivered, and discussions which took place, in all these meetings; and, so doing, comprises very valuable contributions to the literature of education, in many phases. It is not possible to give, in this appendix, more than a few extracts from this valuable collection, nor is it essential; since the volume published by the Association is readily accessible to all who desire to obtain it.†

The papers and discussions relating to the Kindergarten,‡ to Industrial Education and Manual Training, to Drawing,§ and to the very large and notable Educational and Industrial Art Exhibition shown at this meeting, are all germane to the topics treated in this volume and will be quoted from in their appropriate connection.

At this, the seventh annual meeting of the Association, which was opened July 12, 1887, the Mayor of Chicago, the President of the Board of Education and the Superintendents of the City and of Cook County, Illinois, each made appropriate addresses of welcome.

(*a*) *ADDRESS BY HON. ALLAN C. STORY.*

From the address by Hon. Allan C. Story, President of the Chicago Board of Education, the following passages, relating to the topics comprised under the general term of Industrial Education, are quoted:

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*The Journal of Proceedings and Addresses of the National Educational Association, session of the year 1887, held at Chicago, Illinois. Published by the Association. Salem, Mass. Observer Book and Job Print, 1 City Hall Avenue, 1888. Pp. 829.

† Address Professor James H. Canfield, Secretary National Educational Association, Lawrence, Kansas, U. S. A., for copies of this Report of the Chicago meeting, 1887.

‡ See Appendix J, paper VI, (c) to (f) inclusive; of this Volume, "Art and Industry Report, Part II."

§ See Appendix Q, paper VI, of this volume.

> Whether we are doing as well for the coming generation as the teachers of the present did for us is a question that time alone can determine.
>
> The virtue of every nation is measured by the intelligence of its people.
>
> The perpetuation of our own system of government depends upon the education of those who shall succeed to the present generation. What can be of greater importance, therefore, than the proper training of our children?
>
> With the exception of drawing, very little is now taught that serves to give even an insight to the industrial pursuits of the country, in which so large a portion of our people must be engaged.
>
> For the benefit of this large number, this important class the curriculum of grammar-school work should be so modified that pupils may be given facilities for acquiring scientific knowledge, useful to them in the employment which each is to follow through life.
>
> These children leave the school-room and are compelled to waste years that should be devoted to study in learning the practice, often without theory, of the trade or employment chosen for them, and the technical knowledge or manual dexterity, necessary to enable them to become "bread-winners." There should be in addition to our present course of study, a special or scientific course, in which all pupils, who from inclination or other circumstances prefer it, may receive instruction in the elements of simple mathematics, mechanical drawing, physics, chemistry, electricity, magnetism, and such other studies as will bear directly upon their future employment.

MANUAL TRAINING OF HIGH SCHOOL PUPILS IN CHICAGO.

> During the past year classes of high-school pupils in our city have received instruction in mechanical drawing, combined with wood-working with tools, with the most astonishing results, and at trifling expense. Samples of their work are here to-night on exhibition.
>
> It is not contended that it is either necessary or proper to teach a trade at the expense of the State; but, rather, that, by combining industrial work with the teaching of the school, a better method of training the intellect is obtained, insuring greater efficiency in the workman and a saving of time to the pupil, both of which are of benefit to the State.
>
> The tendency of such a special course would be to make our scholars either commercially or industrially a success, in that each will possess some scientific knowledge which can be utilized, as he passes out from school into the active world, in which thenceforth he is to be a factor.
>
> Experience teaches that boys thus trained more readily comprehend the oral teaching of the schools, and have a better understanding of what they read. Those, also, who take the mechanical or manual course of study, are enabled to carry along the same studies of the course as those who do not, thus demonstrating that the exercise incident to manual education is a stimulant to intellectual development.
>
> In France, since the war of 1870–71, this feature of school work has received marked attention, and added materially to the development and industrial resources of the people.
>
> The British nation has also given attention to this feature of developing the resources of its laboring classes, by providing a course of practical instruction in the fundamental principles underlying the various mechanical industries of the country. And it is said that boys from twelve to fourteen years of age, in the "new board schools" of any of the large cities in England, will exhibit as much knowledge of the studies referred to as those sixteen and seventeen, in the high schools under the former course of study.
>
> When it is remembered that the larger proportion of pupils in grammar schools get no other opportunity for an education, the importance of making their educational life as useful as possible must be apparent to all, and I think the working people of the country have a right to ask this of our school authorities.
>
> It is the complaint of many employers that they cannot keep our American boys at their work, that they do not like manual labor. It should be the policy of our educators to change this. Our public school system should be so conducted as not to give the children of our working people the idea that labor is either low, uninteresting, or vulgar. We must give this rising generation an opportunity to become acquainted with the scientific principles underlying our mechanical employments, and thus im-

bue them with an interest in them, and an intelligence which will make their employment attractive.

That this can be done without materially increasing the expense is believed; but if not, when the results are fully seen and appreciated by our people, the fullest authority in this direction will be granted.

It has been said by those competent to judge that the proficiency exhibited by our high-school class in wood-working during the past year is equa to three years' instruction by the ordinary apprentice system; and, after seeing the specimens of their work on exhibition here, I am prepared to concur in this view.

This demonstrates that, by giving more attention to scientific instruction and to the training of the hand and eye, our public schools may be made to do much toward meeting the present requirements of industry, while the healthy reaction upon the schools themselves will be beneficial, in giving to intellectual training a higher value in all classes of society.

If it can be impressed upon our people, young and old, that to be a successful carpenter, machinist, or moulder, is as honorable, requires as much skill, and can be made as profitable as to be a doctor, a lawyer, or clerk, the demand for apprenticeships in our best shops will be increased, and educated labor supersede the "rule of thumb," which now holds such despotic sway among our mechanics.

The morning session of the fourth day was given to the consideration of "The Place Manual Training should occupy in a system of Public Schools."

Papers were read by President Walker, of the Massachusetts Institute of Technology; by Miss L. A. Fay, director of Drawing in the Schools of Springfield, Massachusetts, and by Professor C. M. Woodward, principal of the Manual Training School of Washington University, St. Louis.

The discussion which followed was participated in by Messrs. Miner, of Massachusetts; Ordway, of Louisiana; Allison, of Nova Scotia; Ham, of Illinois; Soldan, of Missouri; Peabody and De Garmo, of Illinois; Mrs. Rickoff, of New York, and others; President Walker closing.

(b) *MANUAL EDUCATION IN URBAN COMMUNITIES.*

BY FRANCIS A. WALKER, LL.D.

The speaker began with the statement that the need for "mechanical" education, as he prefers to term it, increases with the increase in the size of towns and cities, while the difficulties and cost of establishing it greatly diminishes; that in the country, or in small villages, it is neither so much needed nor is it at present practicable to introduce it. Having graphically pictured the present conditions that surround the town and city boys of to-day, as contrasted with those existing a quarter or half a century ago, he continues:

This brief survey will, I trust, be held to justify my assertion that, as we pass from rural districts and small villages to large towns and cities, the need of what is called manual education, in connection with the school system, palpably and rapidly increases.

On the other hand, the burden of instituting and maintaining instruction in the mechanic arts diminishes as we pass from rural to urban communities quite as rapidly as the need of such instruction increases. This is due, not alone to the comparative poverty of agricultural populations, although the inability of many districts of this class properly to support schools, even of the traditional type, constitutes one of the gravest educational problems of the time. This result is, in a much higher degree, due to the concentration of population in commercial and manufacturing communities, allowing the same amount of apparatus and supplies, and the same amount of skilled service to do a vastly greater work of instruction, than would be possible in rural districts. It is not necessary to contrast the small schoolhouses, widely scattered, which serve the purposes of an agricultural population, with the twelve-room buildings, thickly set, in which the children of our cities and large towns receive elementary instruction, in order to show the greatness of the advantage which would be enjoyed by communities of the class under consideration, in the matter of manual or mechanical education. The difference, in this respect, between city and country must be obvious, on the merest mention. Where children, by thousands, are concentrated in narrow districts, the question of providing the means of instruction in the mechanic arts is little more than the question whether such instruction is itself desirable. The technical teacher, who, in the country, could reach only a few small classes, for a single lesson in a week, would, in the city, find his power of instruction limited only by his own strength and vital force. The apparatus and tools, which in the country could serve but a few score of pupils; would, in the city, serve as many hundreds. Even the supplies, purchased at wholesale, and requiring little transportation, would cost the city school board much less than the rural school committee.

SCHOOLS OF MECHANIC ARTS READILY PROVIDED IN CITIES.

So great is the total effect of these differences of condition, that it may be safely said that a city of ten thousand inhabitants, or more, could provide instruction in a variety of mechanic arts, under the best teachers, with the choicest apparatus, tools, and machinery, and could carry its pupils from stage to stage through an extended mechanical education, at less expense than would be required to give the same number of pupils, in rural districts, a rude course in a single art, under the cheapest arrangements that could be made as to teachers, tools and supplies.

The concurrence of the two conditions indicated, namely, the greater need of manual or mechanical education in cities and large towns, and the diminished cost of instituting and maintaining such a system of instruction in communities of this class, and, I might add, the greater financial resources there available to do whatever may be fairly determined to be for the good of the rising generation: this concurrence of favorable conditions, seems to me to establish the expediency of beginning in our cities and large towns whatever it may be decided to undertake in this matter. Here it is the machinery should be earliest set up and put to working. Here it is we may most fully and conclusively determine the capabilities of the system, ascertain the unfortunate liabilities, if any, to which it is subject, and create that body of experience which is essential to its full and perfect development. Here, too, it is we should train the teachers who will be needed for the extension of this kind of instruction, outwards, stage by stage, from more to less compact communities.

METHODS AS YET EXPERIMENTAL.

Whether, within urban communities, the development of the system of manua education should be by a gradual extension downwards from the high school, or upwards from the grammar school, is a question deserving the careful consideration of all interested in this subject, a question on which light may perhaps be thrown by experience. The most popular procedure at the present time, in promotion of manual education, appears to be the institution of high schools of the mechanic arts, as in St. Louis, Chicago, and other Western cities, the question of such instruction in the grammar schools being left to the future.

In Boston, in addition to a small private high school of mechanic arts, we have introduced instruction in carpentry, to a limited extent, into the grammar schools.

When Lady Hamilton asked the sailor who had brought her a message from Lord Nelson, whether he would have a glass of ale, or a little rum, or should she brew him a punch, Jack, with a proper pull at his forelock, replied, "Well, your ladyship, I'll take the ale now: and be sipping my grog while your ladyship mixes the punch." I am disposed to think that we should deal with this question of the introduction of manual education in our schools, in somewhat of Jack's rather grasping spirit: that we should take all we can get, and this, as soon as possible. Not that I am anxious to hasten the complete result, viz., the universal introduction of manual instruction into our public schools, for at least, all scholars above the age of twelve; not that I am sanguine of immediate success in whatever may be to this end undertaken; not that I overlook the probability that some part of what may be attempted will result in failure; but it seems to me that, where so great a task is before us, the sooner we get to work, somewhere, somehow, almost anywhere, anyhow, the better. In such a case there is more waste in delay, in doing nothing, than in many mistakes made in doing something. This is not a situation to which Davy Crockett's maxim applies; first be sure you are right and then go ahead. The very thing we have to do is to make experiments, to create experience.

NEED OF MODIFYING PRESENT METHODS GENERALLY ADMITTED.

We know we are right in our general principles. The best expert opinion coincides with the increasing conviction of the community, that the traditional curriculum of the schools needs to be essentially modified through the introduction of studies and exercises which shall train eye and hand; which shall cultivate the perceptive faculties, so long and grievously neglected; which shall create a respect for manual skill and dexterity, and for taste in design; which shall afford scope and play for the creative and constructive instinct. Just what these studies and exercises shall be, in character and order of succession, is to be determined by experiment rather than by forecast. The question is one which requires to be worked out, rather than to be thought out. The most that is likely to be done in the immediate present will not be more than is needed to accumulate the experience, which shall determine the direction which our efforts in this interest shall ultimately take.

WOOD WORKING.

One thing seems reasonably well established, namely, that carpentry and wood-turning are the arts with which we may most advantageously begin with grammar-school pupils. Work in these lines is sure to interest both scholar and parents. It is easier to get competent teachers than in any other arts. The expense of machinery, tools and supplies comes fairly within the means of any urban community. The practical value of the acquirement of these arts is palpable to the least instructed mind. The last consideration is, however, one on which the advocates of manual training must not greatly dwell, since the strength of their position lies in the claim that such studies are, truly, purely, and highly educational, being actually required, in addition to the familiar studies of the public school, to secure the complete and harmonious development of the powers and faculties of the mind.

That the introduction of these or any other mechanic arts into the grammar schools would give new direction and a fresh impulse to the study and practice of drawing, is certain.

I agree with Dr. Runkle, that drawing in the public schools, not directed upon work in the mechanic arts, is not one-half of what it would be as an educational force, had it a definite object. I look with confidence to see this most interesting and promising study receive a new inspiration, wherever the use of tools is introduced into the schools.

One thing more I will say, though not without hesitation, regarding the inauguration of this system, which is, that the friends of the new education should refuse to accept less than two exercises of an hour and half or two hours each, per week, in the mechanic arts. Wherever committee-men and teachers are not prepared to grant so much as this, cannot see their way to clear at least this amount of space for the mechanic arts, it would be well in my judgment, though I speak with some hesitation, to await a more fortunate time, and a better disposition on the part of those who control the schools.

MANUAL EDUCATION IN HIGH SCHOOLS.

Whatever other arts may, in the development of this system, come to be associated with carpentry and wood turning in the grammar schools, it appears to me that, at the very beginning, we may demand a complete course of both wood and metal working for that smaller number of advanced pupils who go forward into the high school.

He then argues at length the desirableness of this training in the boys High Schools, after which he thus considers the needs of the girls.

WHAT PART SHALL GIRLS TAKE?

I have, thus far, spoken only of the educational needs of our boys. How far the traditional courses of study shall be modified in the case of girls, is a nicer question, respecting which it will not be unreasonable to await light from whatever experiments may be tried with children of the other sex. It would seem to be the dictate of wisdom to solve the easier part of the problem first.

That young women may become heartily interested in studies and exercises in mechanic arts, and make themselves proficient at least in carpentry, is established by our experience at the Normal Schools of Bridgewater and Salem, Massachusetts.

That such instruction, for those who are to become teachers, yields a professional accomplishment of prime importance, enabling the school mistress, especially in the rural districts to make and repair much of the apparatus for teaching natural and physical science, is evident. This work cannot be too strongly pressed, in all normal and training schools.

SEWING AND COOKING.

As regards grammar schools, I confess that my ambition would be satisfied, for the present, by the introduction of sewing and cooking, until the full capabilities of these two kinds of school exercises should be fully developed and fairly tested. The triumphant success which has attended the extension of sewing through the lower grades of the grammar schools of Boston, and the admirable results which have been attained, so far as the cutting, fitting, and making of plain garments have been introduced into the upper grades of three districts, have put this school exercise beyond the stage of experiment. No intelligent and candid person, who thoroughly knows the work done in this department, any longer questions either the practical utility of the results achieved or the appropriateness of sewing in the school curriculum, as a strictly educational agency.

Of equal promise of good to our citizenship and, as I believe, not less suited to the prime purposes of instruction, is the newer school exercise of cooking. So transcendent are the social, sanitary, and economic advantages of instruction in this art, in enabling the very poor to husband their resources, in preserving the health of the community, in removing baleful and destructive appetites, in promoting the comfort and decency of the family home, that any educator would be abundantly justified, were that necessary, in making this an exception to the rule that all school exercises should be distinctly educational. Especially in view of the great and painful change in our citizenship which is making such rapid progress before our eyes, does it become a patriotic duty to seize upon the only opportunity which the State enjoys of reaching the members of the rising generation, and to employ some portion of the time of the children in the public schools for instruction in domestic economy and in the art of preparing food. The practical value of such an accomplishment, in the degree in which it may be acquired in a single brief course, is incontestably greater, to any girl coming from a poor and squalid home, as so many tens of thousands do, than all else she could possibly learn in school, beyond reading, writing, and plain ciphering. The importance to the State of such a girl acquiring this art is, from a sanitary point of view, from an economic point of view, and from a political point of view, greater even than the importance of her acquiring the elementary knowledge just referred to. We are threatened, to-day, in the United States, with a lowering of the standard of living, and with an impairment of the sense of social decency which would together constitute a greater industrial and political evil than we have known. All the letters that ever were taught in our public schools will not do so much to oppose and counteract the unfortunate liabilities, as the two arts of sewing and cooking, properly taught under the authority of the State.

But we are driven to defend the introduction of cooking into the public schools as an invasion of the proper field of education, justified by dire necessity. No one can spend an hour in the cooking schools of Boston, as they have been maintained, first, through the philanthropic enterprise of Mrs. Hemenway, and afterwards at the expense of the city, without being impressed by the very high educational value of the instruction given. * * * .

The next paper, by Miss Fay, who is in charge of the drawing taught in the schools of Springfield, Massachusetts, is the paper already referred to on page 133 of this volume.

As it is a practical paper by an experienced teacher, and attracted merited attention and commendation, it seems desirable to include it in this Appendix; and it is given in full. It should be stated that the address as here given has been revised by Miss Fay, which will account for some slight discrepancies between the present copy and that given in the Association Report.

(c) KINDS OF SCHOOLS TO BE INTRODUCED, AND PRACTICAL METHODS OF INSTRUCTION.

MISS L. A. FAY, SPRINGFIELD, MASSACHUSETTS

An ideal course of study, in which manual training is recognized as necessary to the complete development of the child, and given the time its relative value demands, is, in most places, at present unattainable. Many experiments in this direction are being tried in our schools, and their results, with those obtained by the few who propose to work out this problem under favorable conditions, for the benefit of the public schools, will prove that the *whole* child is worth educating; and, that, to do this, is not only the right but the duty of the public schools.

The average pupil spends eight or nine years in the primary and grammar schools, and may receive manual training by means of writing, drawing with all that it comprises, sewing, and the use of mechanical tools.

THE STUDY OF DRAWING.

The place of writing, as a feature of manual training, needs no mention. Every live teacher recognizes the fact that good writing is the result of correct position and movement, and aims to secure it by training the muscles of the hand and arm.

Drawing, viewed in this light, with all that belongs to right teaching of it, claims our attention, because it is the chief means of manual training in the lower grades, and the foundation of its best advanced work.

Since drawing is an expression of form, the knowledge of form must be obtained from the solid before it can be expressed. Manual training begins with this form-study when the child first enters school.

What we have done in this direction convinces me that a radical change should be made in the first year's course of study, particularly if children are received at the age of five. The work and methods of this grade are already greatly modified in many sections, by an earnest attempt to base all teaching on the needs of the child's mind; and the principle that a child's most complete development is through his *activities*, is everywhere accepted. Yet, while the fact that these activities are not best reached by reading and writing is admitted, we go on making the power to read and write the end of the first year's work.

THE KINDERGARTEN SPIRIT.

With most of us, the kindergarten cannot, at present, become a department of the public schools. But upon its principles should be based the first year's course of study.

Such a course, in the hands of teachers who are imbued with the kindergarten spirit, and who understand its aims and methods as thoroughly as they do the conditions of a primary school, will develop the child's power to think and to express his thoughts, as the present course never can; and it will also lay a strong foundation for manual training.

In the first and second years, the conception of form is obtained by handling the solid, and expressed by modeling in clay, laying sticks and tablets, folding and cutting paper, and by drawing.

Let the drawing be upon paper from the first. A child five years old finds no difficulty in drawing with a lead pencil, if he is taught good position and free movement, patiently and persistently, and a slate has no business in the school-room.

Much may be done for manual training by systematizing the busy work of the primary grades and making it an application of the drawing lessons, not a device for keeping restless children out of mischief.

"But," says the earnest, hard-worked teacher, "How can anything that really counts for work be given to thirty children in their seats, while twenty are occupying my attention upon the floor?"

I answer, by teaching the doing which constitutes this busy work in the time of the regular drawing lessons, until the pupils are able to work independently.

Said one of our teachers of the sewing on pricked cards: "Those little cards are the best means of discipline I have ever used."

Cutting and pasting are as yet the best manual training in the third and fourth years.

USE OF CLAY MODELLING.

During the first and second years, the child expresses in clay his conception of the geometric solids as wholes, and its use is discontinued when he knows these solids.

A part of the time devoted to drawing will be well spent in the continued use of clay.

The forms should now be built up by packing on bits of clay, using both hands constantly. We ask a place for this work, because of its relation to the development of the eye, mind, and particularly, the muscles of both hands. Those experienced in this building with clay. claim that it is the best possible means of training both hands. For this reason alone, it seems worth while to overcome the difficulties that will arise, and continue the use of clay as long as possible. How long is a question to be answered by results.

Whatever increases the efficiency of the left hand is worth doing for its effect on that hand alone. If my left hand were as much my servant as my right, I should gain minutes in every hour. Only vigorous and systematic effort will give this power. Is it not worth acquiring?

In the fifth year, working drawings are made from the simple geometric solids, and in the making of these from their developments a most practical feature of drawing is commenced. This making, with the paper cutting and pasting for designs and clay, constitutes sufficient manual work for the fifth and sixth years.

After the fifth year, the systematic study of working drawings occupies one third the time of drawing, and each object studied should be made by the pupils, whenever possible.

In the last year, it is desirable for each pupil, to make something, showing some practical use of drawing.

With this end in view, the girls use their original designs for decorative purposes, while the boys make whatever objects they choose, always drawing first the plan from which they work.

By making these objects, the fact is emphasized that directions can be received, or one's own thought expressed, by working drawings. The pupil also learns that tools and instructions as to their use are needed, to produce good work.

The grammar-school lessons in mechanical drawing should prepare the boys, who go to the manual classes, to make, without special instruction, the drawings from which they work. To do this, T squares, triangles, and boards should be used.

In the high school a pupil, who has studied mechanical drawing throughout the course, should be able to make, from his own sketches, working drawings from which a machine could be made, or the plans, elevations, and perspective drawings of a house that he has designed.

The free-hand training should give the power to see values and express them simply, not to make a few pretty things.

SEWING.

In our schools, sewing commences in the fourth year, and should be taught, step by step, as systematically as any other study. The time given is one hour per week; the outfit called for comprises thimble; paper of needles; blue, red, yellow, and white thread, No. 40; pins; and one-half yard of half-bleached cotton cloth. The teacher explains each new stitch by making it with colored worsted on coarse canvas, held upon a frame, in sight of the entire class. Each stitch is learned on the practice cloth, and applied directly in making some simple article. The first year's work is to fold, baste, backstitch, and overcast on pieces of cloth, to fold, narrow-hem, and hem a handkerchief.

A wide hem is folded, hemmed, and applied in making a bag. Over-and-over sewing and basting are followed by the making of a pillow-case. The fifth year calls for material for aprons. To be able to make an apron, gather or running-stitch must be learned, to lay gathers, and to baste and sew them on to a band.

Stitching, felling, tucking, catstitching, cross and feather stitching occupy the second term; darning, patching, and joining pieces bring us to the sixth year, in which buttonholes are allowed one term.

Next, cutting by patterns and marking seams are taught; and each pupil makes a garment from pattern, doing her own cutting, marking, and basting, and using, as far as possible, all stitches learned.

This elementary work we hope to see followed in the upper grades, by instruction in cutting to measure, in making dresses, and in more elaborate needle-work and knitting.

A SCHOOL OF CARPENTRY IN SPRINGFIELD, MASSACHUSETTS.

It would be absurd for me to follow the gentlemen to whom we have listened this morning, with any theories of mine for teaching boys to work in wood or metal. I can only state, for the encouragement of those who feel that small beginnings are useless, what has been done with a little money in a small city. An appropriation for manual training of $1000 was made in March, 1886, and an instructor engaged for three days in the week. The school opened in September, with ninety-six pupils, volunteers from the highest classes in the grammar schools and from the first and second years in the high school. These were divided into eight classes, each receiving one lesson per week. An outfit of thirteen benches, thirteen sets of tools, and cupboards for keeping each pupil's work, was provided. This cost one half the appropriation, and the remainder carried the experiment through its first year.

Precision and accuracy have been required from the first. The teacher holding that, unless each step is taken correctly, both the mental and manual training are bad.

The first, because simplest lesson, the use of the hammer, is taught in a set of boxes of prepared material.

The use of try-squares, is taught in lining, at every quarter-inch around a block; of the gauge, in gauging at every sixteenth of an inch around a block.

Saws and planes are explained, and cutting to exact width and length learned.

The knowledge gained is applied by each pupil, in making a set of five boxes of various sizes.

Next, surface planing is taken up, and a set of five blocks made; block-planing being taught by planing the ends.

The study of joints is followed by their application to various useful articles.

A Saturday afternoon class for younger boys has shown that a profitable beginning can be made by boys of eleven or twelve, but not with those of eight. One of these little lads, when told that he was to take lessons Saturday afternoons, declared that "it was mean to take away a fellow's Saturdays, and leave him no time for play."

After a time he was not satisfied with working Saturday afternoon, but begged permission to work night's after school.

Some conclusions have been drawn from the experiments of this year, that we would like to make the basis of the manual work that the increased appropriation of 1887 will enable us to do.

Some of the simplest work, requiring no bench and causing no disturbance, can be taught in the regular classes. While the girls of the sixth and seventh grades are sewing, the boys can be taught to use the rule, gauge, and try-square, squaring with both knife and pencil, and to cut to a line with the jack-knife. Pieces prepared in this manner may be taken home, and with a little previous instruction put together successfully. By doing this we reach a class of boys, who will never enter the grades from which they would be sent to the manual school. They leave school early, compelled to add their earnings to the family income, or ashamed because they are too dull to be promoted with their mates. The chances are that the first will be unskilled, poorly-paid laborers all their lives, while the latter lounge about the street corners, as lazily as they leaned on their desks at school. Bringing a taste of manual training to these boys would open new possibilities to many of them.

From the two higher grammar classes, pupils should be sent once a week for their manual lesson to the regular instructor, and should, by the end of the second years' work, obtain such command of tools as to be able to make good joints and any article needed on the school premises. They should also be able to keep their tools in condition to do such work.

MANUAL TRAINING COURSE IN A HIGH SCHOOL.

The high-school course should consist of daily lessons in the workshop and in mechanical drawing. Turning in wood, pattern-making, and iron-work in all its details, should be studied.

A boy who has completed such a course can work as skilfully with wood or metals, as one who has mastered arithmetic and book-keeping can with figures, and he often excels in mental work the boy who has studied only books. But our right to place manual training in the public schools is not based on the fact that it will make good workmen.

We claim that it is needed to give every person an intelligent understanding of things he deals with every day. A man should be as much ashamed of ignorance of the simplest facts and principles of mechanics, as he would be of not understanding one of the political or financial questions of the day.

VALUE OF MANUAL WORK TO A TEACHER.

A college professor is the last man who would be supposed to feel the need of manual training. Yet, recently, one obtained the privilege of working at the lathe in a shop, that he might be master of all the work done by classes in his laboratory. In my own teaching, I found when planning and criticising objects made by the boys, that I needed to understand making them as a workman does. To learn this, I began using carpenters' tools in a friend's shop. The knowledge I thus gained helped drawing, not only where construction was studied, but in every room in the city. The value of this work, as an aid to my teaching, was so great that my Saturday mornings since the manual school opened have been spent at a bench, in a class composed of school-boys and grammar-masters. From my observation and experience in this class, I am convinced that in no other study is every faculty so entirely employed.

The whole attention must be upon the work, and it must be done just right, or it is worthless.

A boy can keep an eye, or an eye and a half, on his neighbor's business, and learn a lesson in history or arithmetic, but when he has spoiled three or four hours' work, by "having fun" as he saws or planes, he decides that it pays to mind what he is doing, and for this reason the manual-training school disciplines itself.

Since such development and self-discipline are gained by manual training, should it be restricted to boys? Why should not girls be taught the use of tools, wood carving, clay modeling, technical design, and practical cooking, in connection with chemistry?

That all this can be done, and at the same time proficiency attained in science, mathematics, and English, has been proved; and the best answer that the advocates of manual-training can give to those who question its utility and fitness, is, to point to the splendid results obtained by those pioneers, to whose thought and labor manual-training owes its position to-day.

The next paper was by Prof. C. M. Woodward, the veteran pioneer in the movement for Manual Training, who took for his theme—

(*d*) "*THE FUNCTION OF THE PUBLIC SCHOOL.*"

Professor Woodward discusses the topic at length, taking occasion to controvert certain propositions that have at various times been advanced by the Rev. Edward Everett Hale, of Boston, and by Dr. Dickinson, the present Secretary of the Massachusetts Board of Education. Concerning the topics of Drawing, of home training, and the comparative value of the method of apprenticeship and public Manual Training, he says:

I have often spoken of the comparative inutility of drawing, when not supplemented by laboratory work, or wood, or plaster, or clay, or other suitable material. No teacher, who under favorable conditions has added executive, constructive work to drawing, can be for a moment in doubt of its beneficial effect upon the drawing.

I cheerfully grant that much good has been accomplished by these movements, though I regret the use of the word "industrial" in connection with drawing. Drawing is scarcely more industrial than arithmetic, or chemistry, or physics, or penmanship. Nevertheless "industrial" drawing has helped to prepare the way for the broader and more comprehensive system of manual training, which it has been my privilege to help introduce. This is not brought forward as an exclusively industrial feature, and I decline to call a manual-training school an industrial school. In it we have endeavored to bring together the education of the hand and the education of the mind, in such a way that each is the gainer thereby. And we have found it possible to bring together into one, the two educations, which some have thought it necessary to separate. In other words we have extended our scheme of education so as to include those manual elements which are of universal utility in the education of youth.

And we have discovered (and here is the principal point in the discussion), we have found that these manual elements can, at the very time they are most needed, be as successfully and economically taught in school-rooms, by ordinary class methods, as reading or arithmetic are taught, and vastly more thoroughly and cheaply than the manual elements can be taught anywhere else. The burden of complaint has been that they have not been taught at all anywhere. There can be no comparison between two systems, one of which suceeds while the other fails.

HOME TRAINING INADEQUATE.

But, it may be urged that in well-to-do families children are sometimes given manual instruction at home; and the sons have received a species of manual training as apprentices in a commercial establishment. It is thought that these methods are better than the methods I recommend. Let me examine them.

Against the results of the family method nothing can be said, if it is well carried out. It may be thorough, generous, and wholesome in every way. It may possibly lack the spur and stimulus of a score of other minds, what Dr. Harris so admirably calls the "leverage of the class." But it is exceedingly expensive. None but the rich can give what we place within the reach of all. The cost of a private tutor always exceeds tuition fees and school taxes; much more would home manual training exceed its cost in a good school. But the supposition that home manual training is well done is quite unusual. Suppose rather that a father does his best and teaches his son the petty details of his own craft or occupation. On the average, how wretchedly narrow that training must be! In the average family the parents are incompetent to teach much that it is highly desirable that the children should learn.

Go into the first public school you see, and learn the occupation, or craft, or calling of all the fathers of the boys therein. You will find that one half of them have no well-defined craft or professional training. You will find under the head of "clerks" and "laborers" two-thirds of the whole number, if correctly reported. Now I say, suppose these men do teach their sons just what they themselves know, what a sorry preparation they have for an intelligent choice of occupation! It is clear that they have no choice at all. It is merely the European idea of an inherited occupation, and must ever result in the establishment of the worst kind of caste distinctions.

The experience of Europe has abundantly shown that home training for life not only perpetuates caste but degrades the industries of a people. They have found that even when a father has a trade and wishes to teach it to his son, he can not teach it as intelligently and thoroughly as it can be taught in a trade school.

Hence a school is better than home training in handiwork. I will now show that a manual training school is better than any system of apprenticeship, and hence better than any trade school.

OBJECTIONS TO APPRENTICESHIPS STATED.

To the commercial method, of more or less formal apprenticeships, several very serious objections arise. First and foremost, the apprentice stops going to school. His mathematical, scientific, and literary training, stop the moment he enters upon his effort to secure manual training. This fact alone ought to kill apprenticeship. It has degraded all mechanical pursuits — not simply brought them into bad repute, but has actually degraded them — and has given rise to the notion that a mechanic needs no education beyond the rudiments of the grammar school, aside from what he picks up at his trade.

Then again, in apprenticeship at any kind of tool work, the boy is not taught drawing as a part of his trade, and yet tool work, however skilful, without drawing is the thinnest, lowest sort of apology for manual training. Not one journeyman mechanic in a hundred is as good a draughtsman, or as intelligent in reading drawings, as the graduate of a manual training school.

Thirdly, the ordinary apprentice gets at best a very narrow kind of manual training. He is made familiar with a very limited range of work, and he is kept at that far beyond the needs of intelligent mastery, till the mechanical habits of a rapid workman are fully formed. Henceforth his handiwork is the result of habit, not of thought, and his intellectual progress as connected with his work is at an end.

Can the value of such a training be compared with that given in a school where the intellect is ever on the alert, and where we introduce the widest possible range of tools, materials, and processes?

But, it may be urged in reply to all this, that the apprentice is all the while earning some money, and again he is saving much time by getting into good paying employment, There is truth in the first observation. The apprentice usually does get, I am sorry to say, some pay even for the first year. It may be only $50, but it is something, and it works badly in two ways. On the one side, it reconciles the parent who may be very poor, or lazy, or indifferent to the boy's highest welfare, to a very poor and unprofitable arrangement; and it may gratify the boy's dangerous appetite for spending money; on the other side, it appears to justify the employer in keeping the lad at unprogressive work, on the plea that he should earn his wages.

As to the saving of time in reaching good wages, it is very doubtful if such is the case. It is the bird in the hand in preference to several in the bush.

But there is a fourth argument against the commercial way of getting manual training, which, to some, may outweigh all the rest, serious as they appear to be, and that is this: To put a boy fourteen or fifteen years old to learn a trade as an apprentice is as a rule to commit him to that trade for life, without intelligent choice of occupation and with little chance for correcting a mistake if one is made. It is a crime against freedom and humanity.

Few people, not forced by cruel necessity, are willing to take such serious risks for such questionable gain.

There are plenty of people whose mental make-up is such that, while they may succeed fairly in other paths of labor, they are unfit to be mechanics. They have not the ability, the proper mental qualities. To set such people to learn trades is most unfortunate. They are sure to be low-grade, indifferent workmen, always struggling against a fate, which a better knowledge of their capacities would have avoided. The fact is that, until one has had an opportunity to develop his faculties, neither he nor his teachers can tell what his "bent" is, nor what there is in him.

The student of a manual training school takes all his work without bias. There is no presumption either for or against a particular line of work in life. He is as free as it is possible to be. He probably changes his mind every year on the subject of what occupation he is best fitted for. At the end of his school course, however, he is likely to see clearly where he is strong, and where he is weak, and to direct his choice in the direction of his strength.

OBJECTIONS TO APPRENTICESHIP RECAPITULATED.

To sum up the objections against the commercial method of getting manual training as compared with the school method:

1. The apprentice gives up all further mathematical, scientific, and literary training.
2. He fails to learn practical draughting.
3. He gets a very narrow training, limited to the details of a single trade, often less than a single trade.
4. He hazards all on a single choice of occupation, without trust-worthy knowledge of his abilities or his tastes.

The conclusion I reach may be thus concisely stated:

1. Every child should have systematic mental training and manual training.
2. These two kinds of training, should be given side by side and simultaneously in school.
3. The manual training thus given is far more thorough, far more valuable, and far better supplemented by other culture, and is gained far more cheaply than that gained in any other way.

I am not acquainted with the various objections urged against the introducton of manual training in public education. Some claim that it would introduce the idea of caste. Some people do not realize the extent to which caste already exists in connection with education. The very objection suggests that, in the mind of the objector, manual training is socially low-grade as compared with ordinary high academic school training. In point of fact, I doubt if such is the case to any great extent; and to the extent that it may be true, it is the result of a false estimate of what manual training is. I doubt if, in any well-organized manual training school, or in the community around it, there has been any increase of the caste feeling in consequence of the school. On the contrary, I believe the effect is just the other way. * * * .

He further protests against the Manual Training School being characterized as a "special school," and closes his paper thus:

But I do not admit that a manual training school is a "special" school. It is the Latin school and the English high that are special. Take a list of the Boston boys between fourteen and eighteen years of age, and see how many of them need Greek and how many need manual training. Then take the graduates of a high school and of a manual training school, which have stood side by side long enough to afford a basis of comparison and see which set of graduates has scattered most widely into occupations requiring cultivated brains.

No, I am clearly of the opinion that the high-school people have no right to call the manual a "special" school. It is not.

In conclusion, let us not fear to build our own house. Let us not fear to strike out for ourselves, when the age demands something new. Progress is essential to life, as Browning says:

'Tis a life-long toil till our lump be leaven.
The better! What's come to perfection perishes.

I see nowhere, in either ancient or modern times, a people whose youth have been trained as our youth should be trained. Neither Babylon, nor Athens, nor Rome, with their pinnacles of culture resting on the barbarous foundation of human slavery; nor the blooded aristocracies of more modern times, buttressed and supported by millions of laborers, ground down in ignorance, poverty, and superstition; none of these can teach us how to educate, construct, and adorn an American citizen. We must not expect all our boys to rule, or to be ruled; to direct, or to be directed; to employ, or be employed. No narrow, selfish aim, no prejudice of caste, no false claim of high culture must mislead our pupils.

Give them a generous, symmetrical training; open wide the avenues to success, to usefulness, to happiness, to power; and this age of scientific progress and material wealth shall be also an age of high intellectual and social progress."

As in the discussion which followed many interesting and varied opinions were expressed; so diverse as to show that no agreement among educators, or even among the several advocates of Industrial Education in some form, has, as yet, been reached; it has seemed advisable to give this in full, as one of the latest and most comprehensive expressions by educators in regard to these related questions. Mr. John S. Clark, of Boston, it will be observed, brought out very strikingly the fact of the rapid progress made in commanding the attention of educators; since, only five years before, it was impossible to get this same association to give any consideration to the subjects included under the term Industrial Education.

Dr. Peabody, calls attention to the confusion of terms which arises in these discussions, and utters a gentle warning to the enthusiastic advocates of manual training who are ready to claim that it has a moral, and seem almost ready to assert for it a religious, influence upon the pupils, that it will not do to claim for it too large a pedagogic value.

(e) *DISCUSSION.*[*]

Dr. Miner, of Massachusetts. They are not altogether crazy, they get things mixed. General Walker is a member of the Massachusetts Board of Education. Dr. Dickinson is Secretary of the Board of Education. General Walker has not told you that manual training should go into all the public schools, the rural districts included; he flatly excluded them. It is not a question of manual training or no manual training. Dr. Dickinson does not object to the cooking school; Dr. Hagar's carpenter school, in the Massachusetts Normal School is under the direction of the Board of Education, and they do not object to this matter; Dr. Boyden, of Bridgewater, is also under them. These are not the questions in controversy in Massachusetts, and many other States. The general school law makes the school curriculum imperative. Dr. Dickinson says, "Why should the general law make education in carpentering imperative any more than make imperative the engraving on steel, on silver and gold, or painting a flower upon china and porcelain?" It is a question not of what is valuable, but how to get at it. Gen. Walker showed us how to teach manual training without bringing confusion into the public school. Now, I am not committing myself as to my own judgment as to what may be done. I believe we are in a transitory condition, and we need a little patience and a little experience, all round.

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[*] Reported by a stenographer.

I can hardly speak concerning the last paper. The gentleman did not make quite clear whether he would carry manual training into the schools under all circumstances or not. He shakes his head. Now, if Dr. Dickinson were here, he would shake hands with him, I have no doubt; perhaps, use five minutes in doing it. However, the truth is, experiments are going on in various quarters. Massachusetts is in the path of improvement, and it is either going down or coming out on one side of this question, Dr. Hagar will be able to say which. The Board of Education is not disposed to judge anything before its time. The Board of Education, as Dr. Dickinson suggested, has nothing to do with the schools of Boston, directly, or with those of any other city or town. The Board of Education is directly connected with the work of the Normal School including the Normal Art School, which is a training school to a certain extent. The whole end of the manual arts is taught in the Normal Art School; that surely does not show distrust of manual training; it is rather along with it. Besides, two years ago we got leave of the Board of Education to introduce a class of practical artisans in which the principal of the school, Mr. Geo. H. Bartlett, took a very active interest. Of course the schools can teach many practical arts, such as designing wall paper, the decoration of porcelain or china: everything of that sort is open before us, and is possible to us as we come to it. So we are shaking hands with these gentlemen, and I am glad we have had this discussion of the subject.

Dr. ORDWAY, of Tulane University, New Orleans, Louisiana. I feel that it has been good to be here to-day, for I feel much encouraged for the future in the way of manual training. Some of you think, perhaps, that we who have so much to say about it are not entirely clear. I must disclaim the idea that manual training is a craze with me. I am not a crazy carpenter or a blacksmith. My business is a chemist, and I was brought up in the laboratory, and so physics and psychology are not my specialties. There is nothing like handling the things you study about. There is nothing like seeing the action of chemicals once in a while. Now, as to the study of chemistry in the laboratory, not one-tenth of those who study, will ever use chemistry directly; but I do think that chemistry as a science is or ought to be taught as a means of mental discipline. We have had chemical laboratories for the last thirty years in our schools and colleges. Everybody should study these things, not to make chemistry a business, but for its educational value.

I hold now, in respect to manual training, having had this matter brought to me incidentally, that we have, if you may so term it, the mechanical laboratory, where everybody who takes a higher course may pass through. But that does not go so far as the higher education formed on manual training. It has been said that it ought not to be carried into the grammar school or the lower schools. I leave that aside. We are here to discuss the propriety of introducing manual training, to review the argument in its favor. I believe we and the world at large have come to understand now that the manual training and most of the institutions of education, of the 17th or 18th century, are not suitable educational appliances for the men of the 19th century. If they are, the efforts of you teachers in trying to improve your methods often have been made in vain. What is the use of elementary and primary instruction? We do not hear of Roman constitutionality, we are not quoting the Roman constitution. We are going to discuss the introduction of manual training. It is an absurdity to talk about the construction of wood work as leading to the making of carpenters, and saying we might as well teach engraving, etc. That is not the thing; we do not teach wood work. We do not establish a school to make carpenters. We teach them for the sake of making them use their hands and minds. Give them accuracy of idea. Besides intellectual training, manual training has a great moral influence. We all know how easy it is to vary from the truth a little, and to get by and by into habits of disregard for the strict truth. What we want to inculcate is accuracy in everything. The student who makes a thing like that [indicating] must be accurate. It must be true. If he is accustomed to that sort of thing, it will follow him through life.

With regard to this subject, we are here broadly to discuss how this manual training should be introduced. I am glad we are getting such good light on the subject. There has been a great advance made, and we shall get more light on this subject as the men and women of the country take it up. I might be pardoned for saying something in regard to manual training in the South, where certainly it is needed more than anywhere else. I am connected with a preparatory department of a university, and I anxiously look forward to every reform. We should like to have every student of the high school know something of manual training. There is nothing optional about it. If a boy does not want manual training he can go somewhere else. If he comes to us, he must practice with his hands in drawing, an hour and a half every day, and an hour and a half in the shop every other day. He must have manual training in both forms. Now this matter of drawing is a very important thing in itself. When you remember, it is a very good exercise of the hand and it trains the student to accuracy, We must have manual training. and I hope the time will soon come when it will occupy a more conspicuous place,

THE VALUE OF SEWING.

Mrs. Rebecca D. Rickoff, of Yonkers, New York. To speak five minutes on this great question, after listening to the able papers so carefully prepared, is trying. I can not hope to do more than give you five minutes of rest. As I have listened to these papers, I have noticed that no one of the able gentlemen has yet been able to decide whether all the boys in the country shall be taught blacksmithing or carpentering, but I have not noticed that a single one of them has been in doubt as to the great importance of teaching every girl cooking and sewing. A young man with whom I was talking about the importance of giving up the practice of smoking replied, "What shall I do if I quit smoking? I haven't any sewing to do." Think about that, ladies. Take this question of what the boys shall be taught home with you, and picture it in your hearts, and at our next meeting let us hear from you on this question of whether or not the boys shall all be taught blacksmithing and carpentering. Suppose that there were to-day a law passed that no woman in the land should do any sewing, what would be the result? How would you all feel, ladies, if you were forbidden to sew? How much restlessness would there be in your lives! How much of a soothing and peaceful occupation would be taken out of them! Think of that pair of scissors that lies at home in your work basket, and that little thimble you use every day of your lives,—are they not really very dear to you? Would you be willing to give them up, and never see them again?

There are many at the present day who do not like to do sewing. They find it a task, and why? The dear mothers of the last generation worked hard; they were overworked most of them; they made even the clothes that their boys wore, and sometimes those that their husbands wore. There are men living to-day,—the wife of a distinguished professor told me a few weeks ago, that it was the pride of her early married years when her husband stood up and said, "Every stitch of clothes I have on except my boots was made by my wife." That woman didn't have much time left for higher culture; and it is the daughters of those mothers who have been resting with the idea that it is a good thing to be rid of the task of sewing. Those overworked mothers, and those overworked fathers too, of the last generation, found for their children something better than they had, something to relieve them from their heavy tasks, and so they said, "You shall not do the sewing; you shall go to the high school; you shall have an education that shall lift you above those things." That was a great swing of the pendulum, and now in this movement the pendulum swings back again and the time keeps on.

HOW WOMEN OF LEISURE MAY SERVE THE COMMUNITY.

I believe in sewing. I believe that it is a restful occupation. I believe that we shall save our young men from many hours of temptation, when we shall find something to occupy them, as sewing and knitting occupy the young women. When a nation has reached that point, that its material prosperity is well taken care of, there is formed a class which has leisure, and that class already exists in this country. There are hundreds of wealthy women who have hours in which to do nothing; and what are they doing? They are found in all of our large cities. Many of them are turning their thoughts to the cause of education in all its phases, for the uplifting of those who are less fortunate. In the city of New York, there was started a little school called the "Kitchen Garden," in which the children of the poor were taught housework, and as the work extended, there came a cry that these children were being trained for servants; and a company of wise women in New York, under the name of the Industrial Educational Association of the city of New York, took up that question, and they met it in this way: Into all the fashionable boarding schools of New York city they introduced the subject of sewing, and cooking, taught by the same teachers who taught the children of the poor; and now the question is which one is to be the mistress, and which one is to be the maid.

These women of culture and the women teachers of the United States have their hands on the lever, and I call upon you to give this subject most thoughtful attention, and prepare yourselves by your own thinking, and by your own observation of what is going on, to decide this great question.

Dr. Allison, Superintendent of Education, Nova Scotia. I appreciate very deeply the honor of being permitted to say a word to so august and impressive an assembly as this. During the thirty years which have passed since I graduated at one of your American universities, I have taken a profound, I may say an increasing interest in all that concerns the progress of education in the United States. During the years of my college course in Connecticut, as far as I recollect, common-school education was then in a somewhat somnolent condition. The great revolution inaugurated by Horace Mann had largely accomplished the objects for which it had been instituted, and those who advocated it had been resting on their oars. I have been amazed, however, with the rapid development shown by the people in this matter, during the last ten or fifteen years. I have no doubt that the great interest which has been awakened on this subject has been largely due to this Association, under whose auspices this immense number of teachers has convened here, in this great and wonderful city of Chicago.

INTEREST TAKEN IN EDUCATION BY THE GOVERNMENT OF GREAT BRITAIN.

Now, Mr. Chairman, I know how valuable your time is, I know how oppressive the heat has been on this audience during the discussion; but I wish to say that this discussion seems to me to have been exceedingly pertinent. I have been charged by the government which I serve, with the duty of considering this subject of manual training in the public schools: whether or not it would be advisable for us to enlarge our curriculum of studies, to include this subject of manual training. Now, from that point of view, I have been listening with intense interest to the discussion this morning, and I will say that I have been highly pleased with the remarks of the ladies and gentlemen who have come forward here, evidently under strong convictions, and spoken to us on the subject. I think I am justified in saying that no national government in the world during the last ten or fifteen years has taken such an interest in the study of national education as the government of Great Britain. For a long period of time there has been a disposition on the part of our most intelligent and influential men to consider and study what is going on in other nations, connected with the great question of public education. If you will look at the last report of the commission appointed to consider the subject of technical education, that part of the report bearing on the investigations which were made in connection with the study and development of education in this country, you will see what Horace White has to say. I am speaking now for the encouragement, not simply of those who are interested in manual training and the increased attention given to it, but I am speaking rather for the encouragement of those who are more deeply interested in the ordinary branches of instruction. What do these gentlemen say in their report in respect to this: That while they find the workmen of the United States have not as great advantages in the way of technical schools as the workmen of England, in which every city of ten or fifteen thousand inhabitants has its technological school, yet they say that this deficiency is more than counterbalanced to the American by the superior general education which you in America have before the sharp work of life begins.

EVIDENCE GIVEN BY MR. MUNDELLA AS TO VALUE TO WORKMEN OF ELEMENTARY EDUCATION.

Just allow me one moment to say this much further: that Mr. Mundella, the Government Secretary of the Board of Education of Great Britain, a German by birth, but a British subject, and a man who has taken the deepest interest in education, and has done great work for the cause of public education in Great Britain in the last twenty-five years, and who is also one of the largest employers of labor in the United Kingdom or in the world, employing some five thousand workmen in his manufactories at Sheffield, before this same commission, gave his testimony that, as between apprentices and young people coming to the factory for the purpose of offering their services and seeking employment, as between such persons, having received an elementary education, having received training in grammar, or arithmetic, or any science, as between these and those who come there without any such general education, and yet perhaps with some little manual skill, that the chances were as a hundred to one in favor of the former. I do not say this by way of argument, because the position I hold on this subject is exactly that of the distinguished clergyman from Boston, Dr. Minor, who just spoke. It is only by a careful study, wise generalization, and a deduction from facts upon which we can base a judgment, that it will be wise to introduce this new element into our public schools.

CLASSIC AND BACONIAN EDUCATION CONTRASTED.

Mr. Ham, of Chicago. Mr. President, Ladies and Gentlemen: There are and always have been two theories about education. One theory was stated the other day in the abstract I read in one of the morning papers on the Socratic Method, which dates back from the time of the Greeks: that is where that system came from. The point was, in this way: that by bringing the mind of the pupil and the mind of the teacher into contact, the mind of the pupil was so vitalized, that he gained power to do things. Now the other theory of education is that of Bacon: that is, it has been stated by Bacon, I think, as well as by any member of this Association. Bacon says the true definition is, the legitimate familiarity between the mind and things.

After listening to the papers read this morning, especially those by Gen. Walker and Miss Fay — of course, Gen. Woodward, is not to be mentioned, as he is a veteran pioneer in manual training — but after listening to those statements and seeing this exhibit of work, I conclude that this concrete system, the Baconian idea, is the ruling factor in this audience, because the papers were so well received. I conclude they have adopted that idea rather than the Platonic idea of education. If so, then the advocates of manual training should feel very much pleased, and it gives me much pleasure to appear before you a moment to say so, and to note the progress made in the last three or four years, and to tell you of the gratification I feel in seeing how Bacon's theory of education is being carried out. I also feel, with Carlyle, that to work is to worship; and here is work all about us. We heard from Miss Fay how the work is a discipline for the mind. Work is worship. Now, ladies and gentlemen, if we teach work, we shall teach a love of work, and that is, in my opinion, the highest morality that can be taught,— and so I believe in manual training. The moral influence of manual training is the greatest influence that can be exerted upon mankind. I believe, of course, that education should go to the formation of character: that is the great thing to do; we are not simply to make better mechanics. I have undertaken to say that our mechanics are as a class the best educated men in this or any other community. What we want to-day is the eradication of that self-consciousness that has been a source of misery in the world, that has been a source of destruction of all civilization. We never shall have a civilization that will last, unless we cure self-consciousness; unless we eliminate from the human mind this quality which makes life a struggle between man and man — a struggle to see who will reach the highest point.

INDUSTRIAL TRAINING OF GIRLS IN GERMANY AND ENGLAND.

Prof. De Garmo, of Illinois. As a student of the philosophy of education, I have often wondered why this manual training movement in America has not moved along the line of least resistance. In Germany for the last hundred years there has been manual training such as has been advocated warmly and received so kindly to-day. It has been, however, a manual training for one sex, and not for the other. Germany has no manual training for boys, as an element of public school education. There are indeed a few private eleemosynary institutions, established for poor and vicious boys, but not in general. But the girls have primarily received this manual training which has been advocated here to-day, and I am glad the American girl is so well represented. I wish, however, to speak of another country across the sea. We think sometimes that Germany is an autocratic, a despotic government, and what Germany does you cannot do, but there are a people across the water who are the peers of this nation in democratic sentiment. We are conservative, united, democratic, to-day; yet in that country, the fountain of democratic principles, this matter of manual training for girls has been for a long time faithfully and successfully prosecuted. Cooking schools are established in every Normal School in England, and they are as fine as they are in Germany. In the State schools, ladies are employed to go from one school to another. They give a lecture to about sixty girls at dinner-hour, covering the main lesson, explaining its principles; and then they have those pupils come to them in groups of ten or a dozen, and go through that work.

I hope to see, in every Normal School in this land, this great department represented.

Miss Higbee, of Tennessee. I am not accustomed to the platform, and I came here to-day simply because I could not get a seat in the audience. Sitting at the feet of Gamaliel, is, to me, much preferable to trying to aid him in any way except by doing what he says: you know we learn by doing, and that is the theme of to-day. It is difficult to represent Tennessee. There we have been working in this cause for twenty years, and I cannot tell you in three or four minutes all we have accomplished. The thought that has impressed me most this morning is this: I think one of our speakers referred to the fact that we go back to the old civilizations in educational matters as we do in the arts, in science, and in literature. So with our present system, I think if we look back, we will find the germ of this manual training communicated to us. I remember a thought of a German philosopher, something like this: All education consists in the answers to these three questions: What can I do? What ought I to do? And, What may I hope for? Now it seems to me that the answer to the first question, "What can I do,?" is here being exemplified. We must teach the children what they can do. You perhaps all remember the old saying, a sort of paradox, "I know what I know, and I know what I do not know." Well I think if you know what you know, that embraces half of education; and the other half is to know what you do not know. If you know what you know, if you teach the children to know what they know, then we will have accuracy, and we will have the truth.

Again, if we know when to stop, if we do not assume to know what we do not know, if we know how much we know, then we have the first answer to "What can I do?" Then comes "What ought I to do?" Very plainly I ought to do only what I can do. Teach the children after they learn, then to do. The commandment is, after they learn to labor, put them to it. Then there will be no question of discord. That is what we are trying to do in the South, to teach them to labor, to be useful, not only as helpful to themselves, but as much more helpful to others, and to lead useful lives.

President Soldan, of St. Louis. Ladies and Gentlemen: I am glad to see that a new force has made its appearance in education, that of manual training. I am glad, not for the reason that new results will follow, not for the reason that things may be made for the eye, but for the reason that it deepens the thought process, which is the training, the education of manhood and womanhood for life. For the reason that it attracts more attention, and enlists stronger sympathy. You have now the electric light, and you can turn out the old gaslight. It is a new force. I treat this manual training as a new force which will send light to what is now dead matter. That light begins to shine already, and I hope that when the new education is completed that we can turn out the gas of the old education, and be guided by the new electric light of manual training.

Dr. Bellows, of Illinois. I only have this to say. God has given us bodies and minds, and whom God hath joined together let no man put asunder, is the advice of the preacher, when he stands you and your lover up on the floor and pronounces you husband and wife. Where the education of one begins, the education of the other begins, and where you begin to leave the one out of acount it will get behind, and prove a burden to the other. I am glad of this opportunity to say to you that I earnestly believe you cannot leave one out of account without hurting the other. My text to begin with and to close with, in the education of the mind and body, is that God has, united them, never let them be put asunder in your system of education.

President Sheldon. The platform has had its way thus far, this morning. Now, have you any questions to ask these learned ladies and these humble gentlemen?

Mr. Greenwood, of Missouri. Will the boy or girl, who spends an hour or two each day in work, make more rapid progress in other studies?

President Sheldon. What say you, Professor Woodward?

Professor Woodward. My observation is, they make equal if not superior progress, particularly in mathematics.

A Voice. I wish to inquire if any of this work can be done successfully, without a special teacher?

Dr. Ordway. I think not.

A Voice. Yes, it certainly can.

Professor Greenwood, of Missouri. Do not the girls generally from the country know how to sew, how to make garments, and how to cook?

Mrs. Rickoff. No.

President Sheldon. No, says Tennessee. No, from Kansas. What say you, ladies—do you know how to use the needle and scissors?

A Chorus of Voices. Yes! yes! yes!

President Sheldon. Let all teachers who can sew raise their hands. All hands up, and it is unanimous. All can sew, and I knew it would be so.

Mr. Clark, of Boston. It is about five years ago, ladies and gentlemen, as the President of this Association can testify, that I undertook a private job of log-rolling with him to get the subject of industrial education discussed by this Association at one of its annual meetings, and he told me then it was utterly impossible to carry it out.

President Sheldon. And I told you the truth, sir.

Mr. Clark. I do not know what to say after such papers as you have heard here this morning. There seems to be but little that can be said in addition to what you have heard, but I could not help feeling, as I listened to the words of the president of the Massachusetts Institute of Technology. I could not help thinking of the battle some years ago at Spottsylvania. There was a magnificent charge of Hancock's corps, and in that charge Gen. Walker bore a most conspicuous part, if I am not mistaken. I thought as I listened to his remarks here this morning regarding the charge upon the public education of America here to-day, that it was only equalled by the military record which he has left behind.

Only one word more. I have referred to the fact that five years ago this question could not get a footing in this Association. I am now commissioned by Mr. William Mather, who five years ago was a member of the Board of Great Britain, and reported upon technical education in America; and who within the last two months has been supplementing his observations, and who will report before the British Association about the first of August (he sails to-morrow from New York)—I say I have been commissioned by him to report the opinion of this meeting on the subject of industrial education, in order that he may lay it before the British people. Now, I want for a moment to tyrannize over your chairman, and ask if it is the opinion of this audience that the question of industrial education is one of sufficient importance, to be regarded as the most important of all questions of public education. In other words, if this question of industrial education is the one to which attention should be prominently directed. Is it your opinion that it is? All those in favor of it, say aye.

I think it a favorable vote. I think from what I have heard said on this important feature of public education, that the world is moving.

President Sheldon. I would like to ask how many persons in this audience were present at the great meeting of this Association held in Chicago, in 1863,—twenty-four years ago. Will all who were present at this meeting please rise?

Ten persons rose.

How many at that time ever thought of introducing manual training or the use of tools into a public school? Let them rise.

No response.

They have all come since.

Now, we are in the State of Illinois, a State that has treated us grandly, and dealt with us gloriously, and we want to close this discussion (except for the final summing up of Gen. Walker) by having the President of the State University of Illinois, Dr. Peabody, say his good say.

THE ECONOMIC AND PEDAGOGIC FEATURES OF MANUAL TRAINING STATED.

Dr. Peabody. For thirty years I have been patiently laboring in such a way as is possible for me, with the principles of science on the one hand and the practical application on the other, that they should go forward with one pace, step by step, in education. I have endeavored in every way to promote harmony, and with that object in view I have strong sympathy for this whole subject of manual training in its broad character. I find that there has been in this discussion a sort of jumbling of terms; that if one was satisfied that there was a propriety in the general establishment of manual training, practically he must accept the theory that all boys, and perhaps all girls should be sent through the shop of a machinist or a carpenter. I do not believe that that is an honest answer, I do not believe these things necessarily go together. I believe the work shops of manual training have a pedagogic and an economic value; that the economic side of that work is that it should enable the person who had done it to do better work, to bring out better results, to accomplish something in the way of getting his livelihood; and that the pedagogic side is to do something towards making him a larger and nobler, more perfect and more complete man. Undoubtedly this question of manual instruction has its utility on both these sides. There cannot be anything in the way of instruction, anything in the way of training or discipline, which shall not have its pedagogic value.

THE CHIEF VALUE OF MANUAL TRAINING IS ON ITS ECONOMIC SIDE.

Yet it appears to me that the chief value of this manual training belongs on its economic side, and I am disposed to protest right here against the assertion that is sometimes made that they do not care to discuss the economic side, that they will have nothing to do with this. I believe the time is rapidly coming, and we are being forced to it by the circumstances round about us, when young men and young women must get in schools their instructions in trades; because there will be no other possible way in which they may get that instruction; and that boys and girls will come out of those institutions ready to earn their daily bread. I cannot see how this is to be got at entirely except through education.

THE ESTIMATE OF ITS PEDAGOGIC VALUE SEEMS TO BE EXAGGERATED.

On the other side, we have a pedagogic value. I am unable to follow some of the lines so far as they have been followed in this discussion. I am unable to say that there is that result in its pedagogic force which is claimed for it. I have had some practical experience in this matter. I earned the money by which I went to college, by such an implement as that (holding up a carpenter's hammer), working fourteen hours a day, and I think I have some experience in that direction. I fear that in the use of that implement, and most of the implements here, there is little of that pedagogic value. That there should be some instruction is beyond question, but it is slight as compared with some other methods of training which might be adopted. I would prefer, if I could have my way, to have these young men disciplined thoroughly mentally, and then possibly I should put them at this work.

PRACTICAL UTILITY OF THIS TRAINING TO THE BOSTON CLASS OF 1877.

I think the best class work I have ever seen was brought from the Massachusetts Institute of Technology, in the spring of 1877, when the first class of that institution was put upon shop work, being young men who had had the discipline of the entire course. I have had in my hand some of their specimens, I have known what they have done, and some of their work is shown in this city. I once went with one of these young men down into the machine shops of the Illinois Central Railroad, and there Mr. Jeffreys declared that he had but one man in his shop who could better the specimens that were presented to him; yet this work was practically the work of twelve days' instruction, of twelve hours each. These young men having been trained in that method, were then competent to put themselves to that work, and to accomplish in a short time vastly more than they could have accomplished in months of time, in the early part of their course.

PRESIDENT SHELDON. Of what significance is that wonderful work in the exposition, by the feeble minded children?

DR. PEABODY. I submit, the President of this Association has no right to encroach upon my time.

PRESIDENT SHELDON. I would like to know what it means. Is all mechanical work, work without thought? I think you, as the master of ceremonies in industrial work in Illinois, ought to answer my very simple question.

DR. PEABODY. So far as I understand, sir, that is work which has been produced under careful and elaborate training of special teachers, who have watched that work, and have brought it out as mechanical work. That is the result of brain work, under the intelligent guidance of the teacher.

PRESIDENT SHELDON. Is it like a man who can't write his name, and gets another to sign his will?

DR. PEABODY. I should say the other man had instructed him how, probably, to make his will.

PRESIDENT SHELDON. Then you do not claim it to be intellectual work at all?

DR. PEABODY. I do not know what they claim for it: I cannot think that it has a large amount of intellectual character.

PRESIDENT SHELDON. I want you all to observe that work.

DR. PEABODY. It certainly is the most remarkable exhibit on the floor of the exposition.

DANGER OF OVERLOOKING THE INTELLECTUAL SIDE OF EDUCATION.

There is but a single thought more I would present at this time, and that is in the nature of a suggestion. It appears to me that there is a liability and more than a liability, that our lines are drawn aside in this discussion from the very important matter, that we are inclined to attend too much to the material side of our students' work, and that in so doing we forget the more important, the higher, the nobler, the intellectual side. Or, if it be true, that the greatest thing in this world is man and the greatest thing in man is mind, it is our business in this training of mind to see that mind shall dominate and control in all our training. As the mind is trained and developed, it develops the body. It is important that we should train the mind, that we may be uplifted into that nobler and higher sphere of thinking, in which the most glorious element of our human life and of our human thoughts reside.

Professor Woodward, of Missouri. I am not very well satisfied with the way the question of Mr. Clark was received. You understand that he represents a member of the Royal Commission investigating for the British people the subject of manual training. There was introduced into parliament a resolution looking to the equipping of manual training schools and the introduction of manual training into the common schools of Great Britain; and what he wants, to-day, is the verdict of the American people as to the value of manual training as an element of public instruction.

President Sheldon. Ladies and Gentlemen: Those of you who think manual training is of value and importance in a system of education in the United States will please manifest it by saying aye.

A unanimous response.

President Sheldon. Now, General Walker, you have a minute and a half to say the last word in this discussion. You opened it, and you close it.

General Walker. I will not use the minute and a half to impose upon an audience that has borne so long, and so patiently with me in the opening exercises, by saying a single word beyond expressing my profound gratification at the manner in which the teachers of the United States here assembled have met and treated this subject.

In the condensed report of the two sessions of the special "Industrial Department," the several phases of Industrial Education are so succinctly presented by so many practical educators; the speakers, in fact, including among themselves representatives from nearly all the leading special schools of Manual Training in the country, that it is here given in full:

(*f*) *INDUSTRIAL DEPARTMENT.*

Thursday Afternoon, *July* 14, 1887.

The Industrial Department met in the Chicago Opera House, at 2.30 p. m. The President, Professor J. M. Ordway, of Tulane University, New Orleans, Louisiana, opened the meeting with an extemporaneous address, in which he reviewed the progress of manual training, related his own experiences and observations in relation to it, proffered suggestions, and spoke of his hopes for the future of the great educational question of manual training.

EDUCATORS AGREED AS TO NEED OF SOME INDUSTRIAL TRAINING IN SCHOOLS.

All educators, he said, are agreed, to-day, that there should be industrial schools and industrial education. The past score of years has settled this question. Other questions have presented themselves, however, and in casting about for answers we are likely to go astray, unless we keep clearly before us the ultimate purpose of all education, the symmetrical development of the pupil in body and mind. The community cannot train to special trades directly, but should teach the elements of all work.

It is a good thing, of course, for the boys and girls to learn to work, and to become capable of earning a living; but those who advocate the furtherance of industrial education for the sole end of making money, are not on the right track.

It is not the intention, to-day, of the advocates of industrial education, to teach the pupil any special trade or profession. Such would be entirely out of the sphere of the public expenditure of money. This idea has been a bar to true progress wherever introduced.

THE RUSSIAN SYSTEM INADEQUATE TO MEET ALL NEEDS.

Nor has there been satisfactory progress reported where the so-called Russian system has been tried — a system experimented with in Boston. This system teaches the pupil merely to make a part of anything, instead of allowing him to make the whole thing where he could see the defects of any part. It is a systematic attempt to classify the work in the work shop, by separating it from the making of actual objects. But shop work cannot be classified like the work of literary branches. The Russian system may be the proper one for older classes; young people, however, want to make something whole. They do not analyze enough to understand parts.

EUROPEAN COUNTRIES STILL EXPERIMENTING—THE SWEDISH SYSTEM COMMENDED.

Some years ago I visited the European countries, and found that industrial education was as much in its experimental state there as it is with us. In Germany, I visited a number of Gewerbeschulen, expecting to find regular manual-labor schools; but I found very little actual manual work done there. Prussia has a few trade schools, but these generally neglect the education of the man. In Sweden, I found a far better system. The Swedes come nearest to my ideal and the ideas we are trying to work out. In teaching arithmetic, we carry the work along so that pupils can take step after step without much help; the Swedish system does the same thing.

Comenius, during the Thirty Years' War, originated the Swedish idea by trying to revive the old hand-work carried on during the long winter days. During the last few years, the Germans, the French, and the Hollanders, have sent commissions to Sweden to study this system, and the press of Germany reports that they are making great progress in the adoption of the new method.

Industrial education has many friends in this country, but too many know very little about the work. It is becoming popular. Governors and mayors like to mention it in their addresses, and it bids fair to become the prey of politicians, from which may the Lord deliver us!

The question is being debated whether the State has any right to teach industrial education. Many insist that the public schools are already attempting too much, and that some studies should be thrown out rather than new ones introduced. We can answer these objections by claiming that a boy needs a variety of exercises. He needs physical exercise; and, if left alone, he will get it on the base-ball ground. Now this same time, or a part of it, used in systematic work, will give better results. It is the experience of all who are best informed, that a certain amount of systematic manual work is very helpful to general mental growth.

The question, to-day, is not so much what shall be done, as who should be so trained, and where; and how can this work be introduced best? In Sweden, they begin with the age of ten years; in New Orleans, at twelve; but it is my experience that even at this age, too many cannot use men's tools, and I would never permit the use of boys', or toy tools. Nevertheless, many kinds of work might be done before fourteen, the age at which wood-working tools can be best introduced.

WHAT IS TO BE DONE FOR THE INDUSTRIAL TRAINING OF GIRLS?

In all of these experiments the girls have been ignored. What can they do and what can we do for them? Sewing, to mention a line of work which will come up as a subject for debate to-morrow, is a sedentary occupation, and our girls need a different kind of work to develop their physical constitution. Happily the time is rapidly approaching when women will not be confined to one kind of work. The old work of women has been encroached upon by man in the fields of weaving, spinning, and sewing. We have displaced them in their former sphere; and the time is coming rapidly when every human being will do what he is fit for without considering the sex. Old-time prejudices are wearing away. It is a fact that the women attending college are as healthy as the men, and hold their own in the recitation room, and in the laboratory. The girls should be given a chance to live as they may choose. The moral gain will be grand beyond contemplation.

The time is coming when we must develop both the mind and the body. Gymnastics might do the latter, but I believe that there are other ways. The wood-working tools are the things that will do this. If we come to develop this matter fully, I believe that nothing will meet the wants as completely as the use of wood-working tools. In casting about for ways and means, we must lay aside all prejudices and look to the eternal fitness of things in all directions. I hope that in future meetings of the section, the question will not be, shall industrial education be taught? but How can we teach it?

THE PRESIDENT then announced the subject for general discussion: "In Schools of what Grade, may Manual Training be most Properly Introduced?"

He began by stating that he favored commencing with high schools and working downward. As we have had more experience with older pupils it would be less difficult to teach older classes. The expense is an important item also; and the high-school classes being smaller, would require less apparatus and less room. Such a course, too, would wonderfully increase the attendance in high schools, and would make manual instruction popular.

PROFESSOR RICHARDS, of Washington, D. C., dwelt on the idea that all industrial education must look in the direction of general results, and of a symmetrical education of the man and the woman. He favored the starting of manual training with the child in the kindergarten, so that he should grow up to be familiar with the industries of life, and talk knowingly and sympathetically with the shoemaker, cook, or carpenter. Industrial education should bring people into sympathy with labor. There are a thousand ways to do this.

Professor Kilbourne, of Springfield, Mass., said that successful experiments had been tried there, with young pupils, by first teaching them to use a hammer, then a gauge, then a try-square. Next they were taught to cut wood into lengths and breadths, and then to make boxes.

VALUE OF KINDERGARTEN METHODS.

Professor C. M. Woodward, of the Manual Training School of St. Louis, suggested that no one should speak over five minutes, so as to give every member a chance to express himself. He then stated that he had great faith in the kindergarten as a field in which to plant the idea of manual training; but he also warned against expecting and attempting too much in the public schools. Manual training is not cheap, and no one advocates it on this ground. It costs money and time, and should be done most carefully under the guidance of those who have taught it for twelve or fifteen years. Do not try to teach a boy eight years old what ought to be left to a boy fourteen years of age. Do not try to teach trades, and do not select the life-work for a boy too early. Give him his early training first. If properly and intelligently introduced, manual training will be worth all it costs, and work itself into favor with parents and tax payers.

H. M. Leipziger, director of the Hebrew Technical Institute of New York, excused himself, on the ground of lack of time, for not presenting his paper as advertised in the programme, and offered instead an oral statement of his experience. He thought manual training was not a new, but rather a neglected, part of education, and maintained that there was suitable work for each grade, from the kindergarten to the college. It is necessary, however, to adjust it closely to the course. The gap between the work of the kindergarten and the work with wood-working tools of the higher classes, he would fill with pasteboard work, based upon geomtry. He would make everything from drawings, and have the mathematics of all forms well understood. Pupils were fond of such work, and his experience had taught him that they preferred long hours under the manual system, and that their health was better.

MANUAL TRAINING IN TOLEDO GRAMMAR SCHOOLS.

Professor Miller, of Toledo, thought that manual training could be profitably introduced into the grammar school. Three years ago, when they commenced in the schools of Toledo, pupils of the high and grammar schools did the same work. At the beginning the high school was ahead, but at the end of the year the younger boys were benefitted equally with the others. At first we gave these pupils two hours in the shop and one hour in the drawing school each day. Next year we cut down the shopwork to one and a half hours; and, upon finding that the intellectual work of the grammar school was inferior to that of the high school, we reduced the time to forty-five minutes per day for each of the two branches, which I consider as the best arrangement.

Professor Miller's experience was interesting in regard to so-called dull boys, upon whom the effect of manual workw as especially good. All classes liked the work very much, and the removal from the shop was considered a very severe punishment.

After referring to the work on exhibition in the exposition hall, the professor stated that at Toledo, the girls did nearly the same work as the boys. Carving is added for the former. Both sexes have in addition a good deal of laboratory practice. All seem benefitted in health by the work, especially the girls. And all "honors," except one, were carried off by members of the manual training classes.

Dr. Gillett, of Jacksonville, Illinois, spoke of the economic value of the new education and the powerful influence upon the boy of his knowledge that he is learning something which can be put to use.

President Ordway acknowledged that industrial education had an economic side, but he warned the teachers against looking at that side first, last, and all the time.

Professor Woodward advocated freedom upon the part of the pupil to enter the manual training classes, and spoke with feeling of the lifting up of the mechanic to a higher level of manhood.

President Ordway disagreed with Professor Woodward in regard to elective courses in high schools, but thought that here, as elsewhere, the teacher must know what will be best under the circumstances.

Dr. Thompson, of Indiana, expressed the hope that the new education would give the city boy that will-power and vigor which wins the prize for the country boy in nearly every race of life.

At the close of the meeting the president appointed a committee composed of H. M. Leipziger, of New York; and Dr. Thompson and Professor W. C. Latta, of Indiana, to nominate officers for the ensuing year and report at the meeting of Friday. Professor Leipziger having left the hall, the name of Professor J. D. Walters, of Kansas, was substituted.

Friday Afternoon, July 15th, 1887.

President Ordway called the meeting to order. After reading the programme of the meeting, he stated that Dr. Felix Adler, of New York, who was to read a paper, was prevented from being present, and that the discussion of the subject, "Can the Teaching of Needle-work in Girls' Schools be Advocated on Pedagogic and Sanitary Grounds?" would be taken up at once.

The teaching of needle-work, he said, is much like the teaching of reading or writing — it must be taught properly, or it will not be learned at all. But it is a question whether it is of sanitary advantage. Needle-work includes, of course, cutting, fitting, knitting, crocheting, etc. The proper learning of this work is of great economic importance. Cooking is of a similar character, but it requires more physical work, that is, more varied exercise. The latter has been taught in many places very successfully; and, if utility were the end of education, I would place cooking alongside, or even ahead, of sewing. If we put the study of reading or writing on economic grounds, we might do the same with sewing and cooking. Girls are not often permitted (?) to learn this work at home, and there ought to be places provided where instruction in these essentials can be had. Both studies have evidently some pedagogic value. They will benefit as diversions from purely mental work, and tend to enable the pupil to concentrate his mind on a single subject.

SEWING AND COOKING AS SCHOOL STUDIES.

Mrs. **Nellie S. Kedzie**, Professor of Household Economy at the Kansas State Agricultural College, urged the propagation of the cooking and sewing idea as essentials of the proper educational development of girls. In the past years, she declared, few mothers had taught their daughters the proper method of household management; and it therefore devolved upon the school to do so. It is hardly right, she said, to take the entire time of the pupil for mind work. A fair proportion should be devoted to learning practical things. Girls should be instructed so that, if it should become necessary for them to become servants, they would be good ones; and if they were to be mistresses, they would be capable of properly managing their servants. The difficulties of arranging proper courses in this work are not so great as they may seem at a distance, and the educational, aside from the practical gain is the same as that derived from the shop-work of the boys. In the cooking, especially, there is a great advantage in that it takes the girls entirely away from the mental work and gives them a rest by changing the direction of thought. To my mind, the education of girls includes the work as well as study; and five years of teaching sewing and cooking, have but strengthened me in this direction.

As for the cost of starting classes in hand-work, I think that ways can be found to provide for the means. My department at the Kansas State Agricultural College expends less than fifty dollars a year; and this is an entire cost for teaching thirty girls. The first expense for the plant, including range, tables, china, etc., was but one hundred and fifty dollars.

We teach cooking to the girls during the winter term of the second year. All the work is done according to a schedule. On Monday, we cook a "faculty" dinner, and serve it at noon; and on Friday we prepare a lunch of sandwich, cake, and coffee, for all who wish it. For the dinner, we collect twenty cents of each member of the faculty, and for the lunch tickets we charge ten cents. The tickets must be obtained a day beforehand. In this simple way we dispose of the prepared food, provide for those who have to stay at the college in the afternoon, on Monday and Friday, and meet the actual expenses of the department.

We also have a term of dairy work for which the farm department furnishes the necessary milk and illustrative apparatus. There has not been the least trouble in managing these classes during the last ten or twelve years. Of course, in a State institution many things can be done which can not be done elsewhere.

Girls must learn to wait on others, either to become servants, or that which is harder still, to become mistresses.

Professor Potts, of the Toledo manual training school, agreed with Mrs. Kedzie that it was just as difficult to become a master as to become a servant, and that the girls are sadly deficient in matters pertaining to the household. In sewing a great deal might be done to make the work more healthful. He spoke of the necessity of confronting this second question in industrial education: that of providing for the girls. We have an arrangement at Toledo for teaching sixteen girls at a time; and the experiment at our institution in cooking has been an unbroken success. The parents are converted.

Professor Hatch, of Chicago, held that the great obstacle in the way of the successful introduction of sewing into the schools was the lack of knowledge of this art among the school-teachers. It is one of the darkest signs of the present, that so many daughters do not care to learn how to run the household. There is a prejudice against work among the young women of nearly every stratum of society which will be hard to overcome.

INDUSTRIAL TRAINING OF GIRLS IN SOME EUROPEAN COUNTRIES.

Professor J. D. Walters, of the Kansas State Agricultural College, spoke of the industrial education of girls, and more especially of the instruction in sewing in continental Europe. He said that such instruction had been given by some in the states of Germany and a number of cantons of Switzerland, for the last thirty years, and that it had been successful from the first. Two afternoons are given to sewing each week, under the care of the regular lady teacher, who usually has charge of the lower classes of the communal schools. Where male teachers are employed in ungraded schools, a practical seamstress is employed, but no one is permitted to teach without a certificate. It is self-evident that the normal schools give instruction in handwork to their lady pupils. Examinations are held at the close of each term. County exhibitions of such work are held occasionally. The instruction includes all kinds of handwork. Great stress is laid upon mending. Sometimes short courses are given at the end of the year in cooking and vegetable gardening. The arrangement is very popular, especially in the rural districts. I believe we can do as well as our neighbors on the other side of the Atlantic; and the way to do it is to begin with the normal school. Unless the teacher is fully in sympathy with manual labor, his instruction amounts to little,—it is charlatanry and mimicry. It is to a lack of sympathy with actual work that I ascribe the greater part of failures in industrial and agricultural schools.

Professor Parton, of Nebraska, spoke of the waste in the American kitchen, reading statistics in proof of his statement. Reducing the value of food consumed in different countries to bushels of wheat, Russia uses but nineteen bushels per inhabitant per year; France, twenty-three bushels; Germany, nearly as much; while the United States are credited with forty bushels. Certainly we are more in need of cooks than dress-makers. We do not know how to produce economic meals. I venture to say that a cook can earn as much or more than the best lady teacher.

Several speakers admitted that the American kitchen wasted a great deal, but held that at the same time the American was better fed than the European. Where food is cheap and all refuse matter goes to the pig-pen, waste on the table is not a complete loss.

Professor Leipziger emphasized the idea that only high-grade teachers should be entrusted with industrial education, and that the best teachers should be placed in charge of the lower classes. The normal school is the school in which to begin any reform. To teach drawing or manual work requires experts, and it is the business of the normal school to furnish these. I do not believe that, as has been stated here, boys and girls ought to receive the same manual training. There will ever be a radical difference in the life-work of the two sexes.

Some speaker having made the statement that the superiority of the German army was due to plainer and better cooked food, and to better physical training, drew out quite a discussion on the merits of material and intellectual food.

Professor Murch, of Ohio, stated that he believed in separate technical schools, but does not want to introduce manual work of any kind into the public schools, or have it taught at the expense of the State. The public school cannot afford to cater to the bread and butter question. It cannot do everything for the pupil; it is simply a supplement to home education.

Professor Rickoff maintained that the future of industrial education was very bright. Wherever we go we find the life of activity in work of this character, which is very encouraging. Why is it that the interest in this education is advancing? The world never moves backward. Aside from reasons of a more practical kind, there are many pedagogical reasons for the introduction of the new education. We require of our pupils more mind work than they can do, and cram them with more facts than they can comprehend, but we do not develop them symmetrically. In teaching a child we must meet it where its knowledge leaves off. In many directions we do not go far enough, in many too far. Industrial education will round out the course for both the boys and the girls. We need instruction of the eye, the hand, and the mind — all.

PROFESSOR BROWN warned against going too far. It is a serious question whether we can afford to change from the purely intellectual to the extremely practical; and sewing and cooking belong almost wholly to the sphere of the latter. We may have drifted too far away from the material, but there is danger lurking on the other side; let us go slow.

DR. THOMPSON, of Indiana, thought that sewing and cooking might be introduced after the gap between the work of the kindergarten and the high-school shop had been filled. He spoke of the comparatively small cost of object teaching and object making. In modelling, for instance, a great deal can be done with such materials as soap, potatoes, and paraffine.

A general inquiry concerning the cost of manual training in public schools brought forth several statements, asserting that three cents per hour for material, and five to fifteen dollars for tools, per year, for each pupil, would more than cover the expense of high schools working in wood.

Discussion closed. * * *.

PRESIDENT ORDWAY then appointed a committee, consisting of Miss Fay, Professor Leipziger, and Professor Rickoff, to report at the next session on "Manual Education Connecting the Kindergarten with the Workshop," which was elected.

The committee on nominations then reported as follows:—

President — Professor George T. Fairchild, of Manhattan, Kansas.
Vice President — Professor H. M. Leipziger, of New York.
Secretary — Professor R. S. Thompson, of Pennsylvania.

Meeting adjourned.

(*g*) *REPORT OF THE EDUCATIONAL EXPOSITION AT CHICAGO*, 1887.

To WM. E. SHELDON,
President of the National Educational Association.

DEAR SIR: The following reports from the different members of the committee appointed by you to examine the educational exhibit at Chicago are respectfully submitted.

GEORGE P. BROWN,
Chairman.

GENERAL REPORT.

The president of the Association appointed the following persons members of the general committee: George P. Brown, of Illinois, Chairman; W. A. Mowry, of Massachusetts; Aaron Gove, of Colorado; Jerome Allen, of New York; Albert Salisbury, of Wisconsin; F. Louis Soldan, of Missouri.

Mr. Mowry was appointed chairman of a sub-committee to report upon the exhibit made from manual training and industrial schools, and schools for the defective classes. He called to his aid E. W. Coy, of Ohio; Thos. J. Morgan, of Rhode Island; and J. H. Baker, of Colorado.

Mr. Gove was made chairman of a sub-committee to report upon the work from city graded schools, high schools, universities and colleges, and normal schools. He chose as his assistants R. W. Stevenson, of Ohio; H. S. Jones, of Pennsylvania; J. M. Greenwood, of Missouri; and Henry Sabin, of Iowa.

Mr. Jerome Allen was made chairman of a committee to report upon the exhibit of school appliances and educational literature for teachers.

Mr. Salisbury was chairman of the committee to report on rural schools, and called to his aid W. J. Brier, of Wisconsin.

Mr. Soldan was made chairman of the committee on the kindergarten and art exhibit, but was unable to give the matter his personal attention. Miss Josephine Locke, of Missouri, and W. N. Hailmann of Indiana, prepared this portion of the report. The reports of these different committees are published substantially as they were presented to the chairman.

The exhibit of the educational products and appliances of the different classes of educational institutions and publishing and manufacturing establishments of this country filled one-half of the great exposition building. While the exhibit could not claim to be national in its extent, and in all of its departments, it was fairly representative of the present status of educational thought and endeavor in some departments of school education in the more advanced States of the Union. For a detailed statement of what was exhibited, the reader is referred to the reports of the sub-committees that follow.

From the nature of the case only a few of the products of a school can be displayed in an exhibit of this kind. Nor are these the immediate products of the school. Those are the children in so far as they have been educated by the school. And to the extent that the products displayed are the work of the pupils, and the result of school instruction, they may properly stand for the degree of education attained in the schools in the departments of instruction there represented. If it should be established, as it is sometimes asserted, that exhibits of this nature are no true representation of what the child is able to do of himself, but are the results of the combined efforts of teacher and pupils, the educational value of the exhibit is not lessened thereby, since it shows the end toward which the schools are struggling, and represents approximately the thought of the teacher of what his pupils ought to be able to do. These products, in that case, fairly represent his ideal of what his pupils should accomplish in the department of school work exhibited. And it may be pretty safely assumed that, in general, an educational exhibit of this kind will fairly represent this ideal. Anything which does not will not be shown.

It must also be borne in mind that what is displayed in such an exhibit will be, for the most part, those products in which manual skill is involved. These can be displayed in a more attractive manner than can be results that are purely psychical, and observers are more interested in them, for the reason that they know that they are not merely the reproductions of a text. The exhibition of that which can be learned directly from a book, when no rules are prescribed for the manner of its reproduction by the pupil, is a matter of comparatively little interest to teachers, because of their ignorance of the rules that were observed in the preparation of these specimens of knowledge. Many of this kind of products were exhibited that were fraught with valuable suggestions to teachers, as to both the matter and the method of teaching in the different grades of school. But the excessive heat during the time in which the doors of the exposition were open, made it impracticable for any adequate examination of that portion of the exhibit that taught these lessons.

The inability of teachers to make an attractive exhibit of school work that does not involve manual effort, and the relative ease with which an attractive exhibit of manual work can be prepared, will account, in a large measure, for the preponderance of the latter in this exhibit. This fact needs to be borne in mind in order to avoid the conclusion that the schools are making manual instead of intellectual training their chief object. But after this allowance has been made, the exhibit may be properly construed to signify that the schools are responding in a very encouraging manner to the growing conviction inside and outside of them, that more attention must be given to this kind of education.

This exhibit teaches the important lesson that drawing has not yet become to any large extent a language of the pupils. But it shows encouraging signs of progress in that direction. In the work from the schools of Cleveland, Columbus, and Chicago, there are notable evidences of an intelligent movement toward this end. It is evident that the greatest educational value of drawing will never be realized until the child can use it as a language for the expression of his thought. The use that is made of drawing in some of the schools of the cities named, and in some others, for illustrating reading lessons, is indicative of what it may become when the teacher shall be able to use it as a language. When these possibilities shall be realized it will be seen to be the manual art *par excellence*, and one that has an educational and economic value common to all classes and conditions of men.

Industrial Education.—The very full and able report of the sub-committee upon this portion of the exhibit will enable the reader to form a clear conception of what it contained. What is the lesson in full which it teaches it will not be easy to state at this stage of our educational devevelopment. It is not difficult to determine the significance of the work of the polytechnic school, of the school for the defective classes, and of the special industrial schools for boys and girls in our larger cities. But what is the true meaning of the work-shop as connected with and a part of the ordinary common school, as illustrated by the report from Peru, Ill.? Has it any significance for the common schools in general, and has it more than a temporary existence in the schools where it is introduced? How much reliance is to be placed upon the assertion that the work-shop has come into the schools to stay? What is the meaning of the statement that the children are made more "practical"? and what is the real value of this thing called "practical"? Questions like these must be answered eventually from another standpoint than that of sentiment, and from one more fundamental than that of the supposed vocation which the pupil is expected to follow. The vital question is, What is the matter and method of elementary education that will do the most toward fitting the pupils of the common schools for right thinking and right acting—that is, for right living in this world? What is to be added to, or expunged from, the common school curriculum must be determined primarily and solely from the answer made to this inquiry. No one can say what shall stay or what shall go until he knows what is the true function of the common school in our civilization. What is theoretically true must be practically true in this as in all other matters. It is admitted that what goes into this curriculum must first prove its right to admission by demonstrating its value to general education. Upon this point the educational world are agreed. A rational curriculum poorly taught must not be supplanted by an irrational one, merely because it may chance to be well taught. The evident remedy in that case is the improvement of the teaching.

It did not appear that this exhibit shed much light upon this question of industrial education as a part of the curriculum of the common school. But it did much to emphasize the importance of manual training in these schools. The chief difference that developed was in the kind and amount of this training. Shall we seek to improve and perfect the manual training alreadyp rovided in the accepted common-school course, or shall we add other forms of manual training to an already overburdened curriculum?

Art Department.—The necessary absence of the chairman of this committee, Dr. F. Louis Soldan, of St. Louis, during a large portion of the time, prevented him from giving to this exhibit that personal attention that its importance demanded. But the excellent report prepared by Miss Josephine Locke, of St. Louis, for the committee, leaves little to be desired. She was requested to report upon the history of the development of art in the common schools of this country, and upon its present status as shown by this exhibit. The report will be read with great interest and profit by every teacher interested in the æsthetic culture of children.

Kindergarten Exhibit.—Because of the sickness and necessary absence for a large part of the time of the chairman of the sub-committee to which was assigned the duty of reporting upon the kindergarten exhibit, no extended report of this has been made. Prof. W. N. Hailmann, of La Porte, Ind., has kindly furnished an enumeration of the different exhibits and what they contained. It would be of great interest to know to what extent the kindgarten has contributed to the improvement of primary teaching in the country. Much kindergarten material of one kind or another is now employed by primary teachers. But how much of the kindergarten idea has been seized by the primary teacher? The work from the primary schools would undoubtedly reveal this, but only to the eye of an expert. At least, he alone could make an adequate and satisfactory statement of it.

Illinois Exhibit.—The exhibit from the State of Illinois was more extensive by far than from any other State. There was in it a good representation of the products of every grade of school, from the primary to the university, inclusive. It was, probably, the most complete school exhibit ever made from any single State, and was especially valuable for the reason that it may be regarded as a type of what the other States of the Union, that have long-established and well-organized school systems, could produce. There were extensive exhibits from twenty-eight different counties, many if not all of which contained work from the rural schools, as well as from the cities and towns. The value of this exhibit to the country would have been much greater but for the intense heat. Any prolonged stay in the building, which a thorough study would require, was practically impossible.

We cannot speak in too high praise of the efficient manner in which the local and State committees, appointed to organize and display these products, performed their duties, under the leadership of the general director, Albert G. Lane, of Chicago. The building was admirably adapted to the purpose, and the facilities supplied by the committee left nothing to be desired.

It may be said of this as was said of the exhibit at Madison, "It was a grand success in all of its departments, and formed a very important feature in the greatest educational gathering ever held in this country."

Respectfully submitted,

GEORGE P. BROWN,
Chairman General Committee.

REPORT ON EXHIBITS FROM MANUAL SCHOOLS AND SCHOOLS FOR THE DEFECTIVE CLASSES.

GEORGE P. BROWN, Esq., *Chairman.*

DEAR SIR: To me was assigned the duty of making report upon exhibits from "Manual Schools" and "Schools for the Defective Classes." I beg leave to present the following report:

In accordance with instructions from the committee, I called to my aid in the examination of the various exhibits the following gentlemen: E. W. Coy, PH. D., Principal Hughes High School, Cincinnati, Ohio; Gen. T. J. Morgan, Principal State

Normal School, Providence, Rhode Island; and J. H. Baker, A. M., Principal Public High School, Denver, Colorado.

I found exhibits from the following institutions which seemed to come within the department assigned me: Omaha High School, Nebraska; Springfield High School, Massachusetts; Toledo High School, Ohio; Chicago High School, Illinois; Hebrew Technical Institute, New York; Chicago Manual Training School, Illinois; University of Illinois, Champaign, Illinois; public schools of Peru, Illinois; State Reform School, Pontiac, Illinois; Rose Polytechnic Institute, Terre Haute, Indiana; Deaf and Dumb Institution, Jacksonville, Illinois; Wisconsin School for the Blind, Jonesville, Wisconsin; Illinois Asylum for Feeble-Minded Children, Lincoln, Illinois.

It is possible that other institutions had exhibits which, in part or in whole, should be included in this department, but in the few days in which the committee were in attendance, and with the gigantic proportions of the exhibit as a whole, it was impossible to be absolutely accurate or exhaustive in examination or report.

There were several exhibits which the committee would have considered as belonging to their department, but which they were told would more properly be classed under another head, and therefore they were omitted in our investigations.

So far as we could secure lists of articles on exhibition, they are presented below.

Lists of Articles on Exhibition from Manual Schools and Schools for the Defective Classes.

FROM THE UNIVERSITY OF ILLINOIS, CHAMPAIGN.

From the Wood Shop.—1. Specimens made with the plane, flat, square, octagonal and round. 2. Specimens showing joints, mortise and tenon, several forms,—through, blind, double, with relish, oblique, etc. 3. Cabinet makers' joints, bevel, drawer, dovetailed, nipper, etc. 4. Dados, with and without dowel pins. 5. Mouldings, frames, and miter boxes, all worked with hand tools. 6. Carved and inlaid mouldings. 7. Turning, cylinders, rings, with various cuts. 8. Turning, rosettes, and newel heads. 9. Veneer work, inlaying, overlaying, panels, etc. 10. Brass cutting. About fifty pieces, made in terms first and second of freshman year. Time — twenty-five weeks; five lessons per week; two hours for a lesson. Third term. · Stair work, and cutting of blocks of plaster-of-paris in forms of stone-work. The exhibit shows a rough block, several blocks cut, and a monumental design in this material. The object sought especially in the instruction, is accuracy.

From the Iron Shop.—Freshman year. Three terms; ten hours per week. 1. Wood work, planed, tenoned, turned, cut with chisel and gouge, leading up to simple pattern forms. 2. Blacksmith work,—drawing out, upsetting, square from round, round from square, angles, rings welded, staples, eyes, tools, as cold chisels, and lathe tools. 3. Chipping of cast and wrought iron in various forms. 4. Filing, squares, hexagons, cubes, and pieces of various forms, regular and irregular; square to octagon, and octagon to round; screws and tops cut free-hand. 5. Turning small iron and brass pieces in the hand lathe. 6. Turning larger pieces, cylinders, cones, and irregular forms, on engine lathe; turning insides, ends, and outsides. 7. Planing with the planer or shaper, flat, square, grooved, crosscut, racks, etc. 8. Accurate filing with file and shaper. Moulding and casting of iron and brass, is practised.

In second year, some machine of importance is builded, as a large drill-press, a milling machine, an engine, etc. Several models of mechanical movements, the design and workmanship of seniors. Among these are Brehins coupling, Hooks joint, old hains coupling, stop wheels, elliptical surface wheels, variable and stop gear on spherical surface; rachet, belting to shafts at right angles; link motions; slot and pin motions; Prancellier's cell. These are carefully made working models, and are mostly designs worked out in size and proportion, but not otherwise original inventions.

Drawings in both departments are shown in large numbers, with thesee and books of tracings, sketches, etc.

SCHOOLS OF PERU, ILLINOIS.

Exhibit of work done at the workshop and sewing room of the public schools of Peru, Illinois.

Workshop.— One plain foot-rest; one sled; one comb-box; two knife-boxes; one pencil-box; one splice; one mortise and tenon joint; one set of drawing models; one small walnut folding table; one checker-board table top; one foot-rest with embroidered cover from sewing class; one slipper-box, embroidered cover from sewing class; one small steam engine.

From Sewing Room.— One sample of darning in old towel; one sample plain sewing, pillow case; one calico apron, plain sewing; one linen apron, insertion work; one linen napkin, marked; one girl's dress. The above work was all done at regular recitation times in workshop and sewing room. It was designed to show the various steps through which the work passes, rather than anything ornamental. In fact, no ornamental work was attempted, or evidently desired. Plain work with carpenters' tools, and hand work with the needle was evidently the aim. The manual training department has been in operation four years; and has proved popular with both parents and pupils. "No part of the day," says the superintendent, "is looked forward to with so much interest as that in which the industrial classes come. We have spent, on an average, one hour a day, during the year just passed." The school district owns all the appliances used, and buys material which each pupil pays for as he uses it. The industrial department has come to our schools to stay. Nothing so tends to make the boys and girls practical as this work and instruction. It costs the district but a trifle, but is productive of far-reaching results.

FROM STATE REFORM SCHOOL, PONTIAC, ILLINOIS.

Boat made by boy who has not full use of his arms; picture frames made from cigar-box wood (nine); chairs, caning (five seats and one back); checker-board and men; tidy made by boy; one pair of shoes made entire by same boy; one pair of shoes made entire by two boys; ten pairs of shoes run through factory in the ordinary way; one walking cane.

The following work was done in tailor shop, by boys without an overseer: One sheet; one coat; one pair pants; two caps; one shirt; two fans (wood); one fancy hanging basket; one white shirt and collar, laundry work.

FROM THE OMAHA HIGH SCHOOL.

1. Cross, halved together. 2. Exercise in sawing to knife line, and use of various sized chisels. 3. Exercise in mortising and chamfering. 4. Half dovetail joint. 5. Half dovetail joint. 6. Brace joint at angle of sixty degrees. 7. Dovetail joints, lapped. 8. Frame, joined by mortise and tenon joints. 9. Open and closed mortise and tenon joints. 10. Square frame, joined at each corner by different joint. 11. Exercise using chisels to cut to knife line, make open and closed mortises and tenons. 12. Miter joint, with open mortise and tenon joint. 13. Triangular frame. 14. False dovetail. 15. Exercise in double mortise and tenon, joint and blind mortise and tenon joint. 16. Box dovetailed at corners. 17. Gate. 18. Jack-plane. 19. Smoothing-plane.

The teacher in charge adds the following:

"The work was begun in Omaha, in 1885, and till May, 1887, was only in carpentry. At that time wood turning was begun. The next branches to be taken up in this school are carving, pattern-making and moulding. The pupils are from eighth grade, and the high school classes. Two girls have taken the course, and their work is in every way equal to the boys'. Drawing is a part of the course, and no exercise is begun till a working drawing is made by the pupil. Average age of pupils, thirteen and one-half years. Time in shop, one and one-half hours per day. Everything is furnished by the Board of Education, and pupils have no expenses.

ROSE POLYTECHNIC INSTITUTE, TERRE HAUTE, INDIANA.

In the exhibit of this institution are shown examples of students' work in wood, exercises in framing, cabinet and inlaid work, and a great variety of patterns by freshman class. Forgings of bolts, hammers, irregular shapes, and machine tools. Castings in brass, finished bolts, nuts, parts of machines, and small bench lathes completed by sophomore class. Small upright drill press, speed lathe, cut gears, and parts of turret lathe by junior class. A link and cam model, turret lathe completed, taps and dies, a dynamo for fifty incandescent lights, reamers, cutters, and fine tool work made and tempered by seniors.

Designs and working drawings for emery-wheel stands, valve motion, pattern-makers' lathe, and small upright drill press. Results of work done with the dynamo metre and steam-engine indicator. Reports of tests of water works and electric light plant, also by seniors.

A map and profile of location of railroad survey through Madison County, Illinois, which location has been accepted by the company.

In drawing, the freshman class show outline drawing from model, and shading from model, and sketches from machines.

The sophomore class show drawings in sepia and pen-and-ink drawings for photo-engraving work with proofs of the plates. A large number of problems in descriptive geometry, line and brush shading, and working drawings made from data given.

The juniors show drawings of gears, cams, stone cutting, working and finished drawing, with original designs in parts of machines.

OMAHA HIGH SCHOOL.

The superintendent of the schools of Omaha, where a careful experiment has been tried in the high school, makes the following remarks in his last annual report:—

"The introduction of manual training into the high school and eighth grade, has been one of the most interesting features of the work of the year. The ends to be accomplished by this kind of training, have been much discussed, but there has been great uncertainty as to the best means of securing the desired results. Technical schools in large numbers have been established and conducted with excellent success, but the pupils in those schools differ widely from those in city high schools. The best authorities are not agreed as to the desirability of making industrial training a part of high-school education. And, with this point conceded, it is not certain what the character of the training should be. One year's experience is a valuable contribution to the discussion now going on, but under the circumstances, all undertakings of this kind, must be looked upon as experimental. Since the 1st of October, 1885, seventy-nine boys, about evenly divided between the high school and the eighth grade, have had the benefit of this instruction. The course has been optional, those taking it doing the same academic work as the rest of the school. Arranged in classes of twenty each, they have spent one and one-half hours daily in the shop under the care of a competent instructor, learning light carpentry and how to use and take care of tools. The teacher has been enthusiastic, and the interest of the boys has been lively and well sustained. The aggregate amount of time spent in the shop amounts to less than a month of nine hours a day, and yet the progress of the boys has been remarkable. Few apprentices, after a full year in the shop, acquire more practical skill.

"It is evident, that manual training schools cannot be conducted without considerable expense, but for this year, one shop has not cost more than some of the regular studies of the high school.

Expense for the Carpentering and Joining Department:	
Twenty benches for 80 boys	$286.00
Per bench	14.25
Tools for 80 boys	510.00
Tools per boy	6.35
Expenses for gas and water service	92.00
Material used	200.00
Teacher's salary	900.00
Expense per boy	24.85
For Wood-Turning Department:	
Twenty lathes	581.00
Shaftings, pulleys and belting	188.45
Engine and boiler	225.00
Wood-turning tools	140.05
Setting up lathes	200.00
Total expense for wood-turning department	1,333.50
Expense per boy	16.68
Expense apart from Permanent Investment:	
For 80 pupils, tuition	1,050.00
Material	200.00
Wear and tear of tools	200.00
Total expense	1,450.00
Expense per pupil	18.12

"A department of this kind has a tendency to hold boys in school at a time when there is a strong inclination to leave and go into business. Our high school and eighth grade have felt this influence, and suffered from it as much as any school in the land; yet of the 79 boys who took manual training last year, 75 remained in school to the close of the year. This is a remarkable fact in the history of the Omaha schools.

"On the whole, our experiment with a manual training department in our high school, as far as it has gone, must be considered a success. It has not interfered with the regular academic work; it has not been excessively expensive; its influence on the high school generally, has, on the whole, been favorable, and the progress of the boys in the mechanic arts has been satisfactory. "It is not too much to say, that the hopes of its friends have been fully realized."

For more careful study, after a general examination of the exhibits, it was agreed, that Dr. Coy should write a special report upon the exhibits of The Defective Classes; General Morgan, upon the Illinois State University; and Mr. Baker, upon the several High Schools. Their reports are given below in full.

UNIVERSITY OF ILLINOIS.

[Report of T. J. Morgan.]

The exhibit of students' work from the State University at Champaign, Illinois, showed clearly, both their method and results. It comprised mechanical drawing in its various stages, and construction in both wood and metal.

There were three very noteworthy features. First, it was quite evident, that the work was directed by a rigid method. It was the work of the hand, but of the hand guided by the mind. Thought preceded action. The brain led, the hand followed. There was an order of succession, a progress from lower to higher. There was a reason for everything. It was an embodiment in lines and material of ideas. This training culminates in the solution of difficult problems, by the invention of curious machinery for the accomplishment of some worthy end.

Students thus trained, do not become mere copyists, blindly following the pattern, but intelligent workmen, competent to execute, to plan, and to direct.

Another feature was the character of the work itself. It was well done. Even that performed by beginners, showed signs of care accuracy, finish. The use of tools may be as pernicious in developing slovenly habits, inaccuracy, carelessness—precursors of failure, as the most vicious system of rote learning. It was apparent, that the students whose work was on exhibition, had a lively industrial conscience, as well as a busy brain and skilled hands. It seemed to be a maxim with them, that what is worth doing is worth doing well. Not variety but finish, not quantity but quality. Workmanship, excellence was stamped on everything.

And this leads me to note the third characteristic feature of the work. Its honest simplicity. Nothing seemed to be done for show, even the ornamental work stood for just what it was. There were no flourishes, no trickery, no pretences. Everything bore the marks of a firm, moral purpose to do honest work. One could not help feeling that such a training would give us honest and efficient workmen, who, as architects, would not repeat the abominations of many modern buildings that try to call attention from their ugliness by high-sounding names, and bridge builders whose work would stand the test of hard usage.

Altogether, the exhibit was most excellent, and justified the wisdom of maintaining such institutions as the industrial university.

Respectfully submitted,

T. J. MORGAN.

EXHIBIT OF WORK OF THE DEFECTIVE CLASSES.

[Report of E. W. Coy.]

This included exhibits by institutions for the Deaf and Dumb, for the Blind, and for the Feeble-Minded.

The Institution for the Education of the Deaf and Dumb, at Jacksonville, Illinois, had on exhibition:

1. *School work.*—Ten volumes of examination papers, showing the regular work of twenty out of the thirty classes in the school. This work was very creditable and very interesting.

2. *Physical aids to hearing.*—These consisted of tubes and combinations of tubes of various patterns, and other devices designed to facilitate communication between persons with impaired hearing.

3. *Art work.*—Pen-and-ink sketches from nature; crayon from cast, and charcoal sketches from nature; oil portrait, a copy; studies in oil from nature; charcoal portrait from nature, taken in one and one-half hours; photo-crayon portrait.

The Institution for the Deaf and Dumb at Delavan, Wisconsin, exhibited specimens of class work and photographs; boots and shoes; crayon and charcoal sketches from nature.

The Wisconsin School for the Blind, at Janesville, Wisconsin, had a very full exhibit. Two departments were represented, namely, the Literary, and the Industrial.

1. *The Literary.*—Dissected map, and pricked outline maps, made for the blind. Also, paper maps, and clay maps made by the blind. Pencil writing and point writing. They use the New York point instead of the Braille point, which is used in the Illinois institution. Kindergarten work, clay modelling. The celebration of Washington's Birthday, of Decoration day represented in clay; farm-life in clay; farm products; "Jack and the bean stalk"; weaving, cutting, and sewing, daisy chains.

2. *The Industrial.*—Carpet weaving, hammock, and fly-nets; cane-seating, brooms,

specimens of sawing by hand and by machine; crocheting and knitting, plain and fancy.

The Illinois Asylum for Feeble-Minded Children, at Lincoln, Illinois, exhibited specimens of kindergarten work and other school exercises, and a large number of articles from their industrial department, among which, may be mentioned garments sewed, and stockings and mittens knit by the inmates; boots and shoes, hammered brass, and specimens of wood-carving. Some of the work in this department was remarkably well done, and those in charge spoke most hopefully of the benefit which they expected would come to these unfortunate children from this source. The over-zealous advocate of manual training might find here some important suggestions as to the degree of mental capacity requisite for success in this work.

No intelligent teacher could study these exhibits of what is being done for the defective classes without deriving from them many valuable lessons. We will mention here, but one of these lessons, viz: that of patience. The teachers who have to deal with these classes, find that many of the avenues of approach by which ordinary minds may be reached, are cut off or obstructed. But with a patience that is almost divine, they discover and invent ways and means of awakening the dormant intelligence; and they succeed so well in developing and training it, that the results accomplished are a source of wonder and admiration to every beholder. If in spite of the obstacles and discouragement that beset their path, the teachers of these pupils are able to do so much, surely the ordinary teacher, in the far less difficult task of dealing with those who are in possession of all their natural powers and faculties, should not lose heart or hope in his work.

E. W. COY.

MANUAL TRAINING.

[Report of James H. Baker.]

The special work assigned me upon your committee was to examine and report upon the Manual Training exhibits of the high schools, including those of the Chicago Manual Training School and the Hebrew Technical Institute of New York. There were represented the high schools of Omaha, Springfield (Mass.), Toledo, Chicago, and Eau Claire. I viewed the exhibits and noted in a very general way the character of the work. Thinking it to be the duty of the committee not to discriminate in regard to the excellence of the exhibits, but rather to obtain an idea of the methods employed and the general educational value of manual training, I also sent a list of questions to the school officers of each town mentioned and obtained replies which are presented in the accompanying table. I may state here, however, that I found no good reason for founding a report upon comparison of the work of the different schools, because essentially the same idea was the basis of all the exhibits; and the extent and excellence of the drawing and the work in wood and metal seemed to depend upon the facilities and the amount of time given to this department. Of the high schools, the Toledo made the best showing, because the department is fully equipped and more time is allowed it than in the other high schools. The Chicago manual training school gives approximately half its time to manual work, and consequently produces more advanced results in that line.

In the Toledo high school there is also a domestic economy department for girls, in which instruction is given in "cooking upon scientific principles and in cutting and fitting of garments." The girls are permitted to take the drawing and wood work in the boys' department.

From answers to the circulars sent to these schools, and from reports forwarded, I draw in substance the following statements assigned as reasons for the introduction of manual training:—

1. It develops certain faculties not developed in ordinary school work.
2. It makes boys appreciate the practical value of the other studies; they perform their regular class work with more intelligence. It increases the interest of pupils in their school work, and tends to keep boys in the high school.
3. It gives an idea of the dignity of labor. It makes boys more manly. It furnishes wholesome employment for leisure hours. It brings the pupil in contact with the realities of practical life.
4. Scholars who devote half their study hours to manual exercises make equal progress in mental work with those who give all their study hours to it.

So far, I have permitted the schools to speak for themselves, endeavoring to present facts and opinions as forwarded to me. I should hardly regard my report as complete, however, without a brief discussion of the subject.

The work of high schools may be classed under the heads of mathematics, science, history and the English language and literature, foreign language, physical training. The work of these departments may be briefly stated. (1) Mathematics: The high school period, approximately from fourteen to eighteen, is the time when the generalizing and reasoning faculties are first susceptible of a considerable degree of development. The power of exact deductive reasoning is to be trained by means of algebra, geometry, and trigonometry. (2) Science. Scientific generalization is taught by means of elementary zoology and botany, while physics, physiology, and chemistry furnish the best exercise in inductive reasoning. Geology and astronomy furnish further exercises in the latter process, but find their highest use in an enlarged knowledge of the material world. (3) History and the English Literature and Language. While history and literature may be the means of cultivating memory, imagination, generalization, and reasoning, their most important use is in enlarging the limited view of the pupil with the experience of the past and inspiring him with some of the best thoughts of the world's great minds. History furnishes materials for correct inductions in regard to State and society. In connection with history comes the study of civil government and political economy, which are necessary for the proper understanding of the relations and duties of the citizen. History and literature more directly than any other studies, lead to the study of mental science which may teach invaluable lessons as to the control and use of the faculties. As a part of mental science there should be presented a brief statement of the laws of reasoning-logic. The instrument of thought, language, cannot be neglected. Study of the English language, both the grammar and the rhetoric, is needed for accurate and forcible expression. In the high school this work may be done in connection with literature. (4) Foreign Language. To this point our way seems clear, but there is a great controversy about the value of foreign language in a high school course. The classical languages are a more direct road to "culture" than any other line of work mentioned. The latin is in an important sense the key to several modern tongues; it may be used to train memory, judgment, generalization, and reasoning, and to gain a knowledge of the principles of language. The incidental value of modern languages is not so great, and the chief argument in their defence is that of utility, that is, they may be the means of intercourse and of acquaintance with foreign literary, and scientific thought. (5) Physical Training. Such exercises as speaking, singing, writing, drawing, gymnastics, military drill, tend to give the mind control of the bodily organs, which control may afterwards be directed to special aptitudes.

In the above statements the use of studies as a discipline has been made prominent. The knowledge obtained of important facts and principles is understood also to be an essential feature of a course of study.

Let us see the results of the different lines of study. The reasoning power is developed; the other intellectual faculties are further cultivated; incidentally the emotions and the will are trained, that is, the taste is cultivated and character is formed, an elementary knowledge is gained of nature, of man, in state and society, and of man as the individual self; language, as the instrument of thought, is sharpened and polished. The doctrinal religious element is left to the church and the family. There is hardly a study in the typical high-school course by which all the intellectual faculties are not cultivated directly or indirectly to a considerable degree, except perception, and this power is trained in special ways, as by drawing. In regard to perception most educators now agree that, from the kindergarten up, the mind is to be brought in contact with things to an extent sufficient to train the sense-discrimination and give clear ideas. Hence the visual and tactile senses are exercised upon form, figure, and dimension, by drawing, moulding, etc., and the observation is directed to specimens and experiments. It is hardly necessary to state that perception is trained at an early period; that memory and imagination are successfully cultivated before the grammar-school period; that abstraction and generalization are considerably developed before the high school is reached; and that this development of faculty is effected by means of the regular studies of the schools.

Now, when any advocate of manual training states that it develops certain faculties not developed in ordinary school work, I must think that the subject has not been analyzed. There is no mental faculty of power known to the psychologist which is not systematically trained by regular school work, and the only sense which manual work in wood and metal trains to a much greater extent is the muscular sense. Moreover not a single concept is furnished by manual work which is not acquired in drawing. As to the statement that manual-training pupils, giving only half-time to regular studies, accomplish as much with them as pupils giving full time to them, I must, in view of the principle of conservation of energy, regard it as a case of enthusiastic mal-observation. The statement that manual work may make pupils more intelligent in their regular studies may be true as to a few applications of mathematics and physics; and the fact that the taste of many boys turns towards construction may make it possible that manual work will increase their interest in the school as a whole, but hardly in their regular studies. That manual work gives an idea of the dignity of labor and brings the mind in contact with the realities of practical life cannot be doubted.

If I understand the advocates of manual training for high schools, most of them claim that its purpose is general education as contrasted with special education; that is, it is equally good for the boy who is to be a lawyer and the boy who is to be a mechanic. Assuming this to be so, and that it is not the purpose of the State to educate in the professions, trades, and industries, since there would be no limit to special demands, if our previous analysis is correct, manual training can claim but a small place or no place at all in high-school work. From the nature of the case and from an examination of courses of study in schools where a large portion of the time is given to manual work, in order to make room for this work the tendency is to lop off such sciences as botany, geology, and astronomy, to limit the study of history and literature, to omit entirely psychology and logic, and even foreign languages, both classical and modern. Such omissions seem of no small consequence, if the high school is to maintain its position as the "college of the people."

It seems a plain fact that manual training can be defended only as special education; it is general only in the sense that it teaches the elements of mechanics and may thus open the way to special pursuits requiring skill in the use of tools. Should it be introduced into high schools for a limited class of pupils who have little aptitude for literary work, but have a leaning toward manual skill and intend to be mechanics in the capacity of workmen, overseers, or inventors? I conceive that this depends upon the wishes of the people, the cost, etc. If it should be introduced, certainly boys should not be unduly urged to choose this work, and the time allotted to the department should be carefully limited.

No doubt the tendency of manual training is to make mechanics. Much is said about the fact that many boys, graduating from high schools, continue their studies in college, enter the professions, or accept clerkships. Has any one yet discovered a reasonable objection to this? I have investigated the occupations of the graduates of one typical high school; the occupations were various and in most cases well chosen. Engineers, farmers, mechanics, stockmen, etc., were by no means wanting. Are not all the occupations crowded? Are mechanics in greater demand than any other class of skilled laborers?

Private manual training schools have a place, but they are schools of special education. The amount of time given to work with tools makes them one-sided, and pupils entering them should have a definite purpose in view.

I will venture to make a few summary statements: —

1. Manual training, that is, work with tools in wood and metal, does very little to educate mental faculty, in addition to what is accomplished by regular studies and exercises. It cannot be defended upon the ground of general education.
2. It furnishes no concepts not acquired in drawing.
3. If a large amount of time is spent in this department it must be at the sacrifice of other work.
4. Manual work in its broader sense should be a part of the regular studies from the kindergarten to high school.
5. Private manual training schools in which much of the time is given to manual work may be an advantage to a class of boys whose time for education is limited, provided they have chosen their occupation.
6. If a manual training school is supported at the public expense in connection with any system of schools, it should be centrally located, and be open to the upper grammar grades as well as certain high-school classes. The work should be voluntary, and should be performed outside of school hours. The time should be carefully limited, that it may not interfere with regular studies.

Respectfully submitted,

JAMES H. BAKER.

The exhibit as a whole was probably the most extensive and the most creditable exhibit of industrial and manual work in schools ever made in this country. It showed conclusively that we have taken a long step forward in this direction, and that manual training has secured a permanent place in the hearts of the friends of education in this republic. It is no longer a question whether manual training is important, but it can scarcely yet be regarded as determined that it should take its place in our public school system by the side of the spelling-book and the arithmetic. We are making rapid strides in all educational matters, both as regards principles and methods, but there are many questions demanding careful and considerate thought. Such gatherings as that at Chicago, and such exhibits as were there made, aid materially in solving the great problems with which the educators of our country have to deal.

All of which is respectfully submitted,

W. A. MOWRY,
Chairman.

Table showing the work and results in the six manual training schools reported by Mr. Baker.

Name of school.	Is manual training introduced in the grades below the high schools?	Work voluntary or compulsory?	Are any academic studies omitted for shop work?	Hours per week given to manual training. Pursued how many years of the course?	Work done in school hours or outside?	Per cent. of boys choosing this work?	How does the manual training affect the excellence of the academic work?	Manual training defended upon what ground?	Character of the work in each year of the high school?
Omaha High School, Neb. (Course 4 years.)	8th grade (next high school).	Voluntary.	No......	7½ hrs. per week, 4 yrs.	In school hours, except one class ½ hour after school.	About 40 per cent.	Favorably if at all.	On the ground of general education; also preparation for industrial pursuits.	1st yr., carpenter work; 2d yr., turning and pattern making; 3d yr., work in brass; 4th yr., work in iron; mechanical drawing throughout the course.
Springfield High School, Mass. (Course 4 years.)	9th grade (next high school).	Voluntary.	No......	1½ to 2 hrs. per wk, 3 yrs.	High school classes outside of school hours; grammar sch. classes in school hours.	About 40 per cent. of the grades mentioned.	Not unfavorably; increases interest in school work.	General education value, and because certain aptitudes are thus discovered and developed.	Carpenter work thus far; classes from the 9th grade and from the first and second years of the high school.
Toledo High School, Ohio. (Course 3 years.)	Begin with a grammar grade.	Voluntary.	No......	In high school, 7½ hrs. in shop; 3¾ in drawing; 3 yrs. of H. S.	¾ hours daily outside of school hours.	About 50 per cent.	Unfavorably at first, but not after system was adjusted.	Wholly on ground of general educational value.	1st year (a grammar grade), use of tools, plain wood work; 2d yr. (H. S.), wood turning and carving; 3d yr., pattern making, forging, brazing, etc.; 4th yr., working metals, iron; free hand and mech'l drawing throughout the course.
Chicago High Schools. (Course 4 years.)	No.............	Voluntary.	No......	10 hrs., one year.	Partly in school hours, partly outside.	About 75 high school boys take the work.	Reported by one school unfavorably; if manual training is introduced, some other studies should be omitted.	Educational value.	1st year, wood work; drawing.

Hebrew Technical Institute of New York. (Course 3 years.)	Admitted after having passed 3d grade of grammar schools.	....	....	18 hrs. per week, of which 8 are given to drawing; full work 30 hrs. per week.	....	Required of all.	Not unfavorably..	As a training for industrial pursuits.	1st yr., work in wood, modeling in clay; 2d yr., as above, also work in iron, wood turning, wood carving; 3d yr., as above, also forging, pattern making, and some special work; drawing throughout course.
Chicago Manual Training School. (Founded by the Commercial Club. (Course 3 years.)	Admitted at 14 years; examined in read., spell., writing, comp., geog., and arith.	....	....	Intention to divide time equally between manual and mental work.	....	Required of all.	....	....	1st yr., carpentry, joinery, wood turning, pattern making; 2d yr., moulding, casting, forging, welding, tempering, soldering, brazing; 3d yr., chipping, filing, fitting, turning, drilling, planing, etc.; study of machinery; drawing throughout course.

VII.

INDUSTRIAL EDUCATION DISCUSSED BY THE SUPERINTENDENTS IN WASHINGTON D. C. FEBRUARY, 1888.

INTRODUCTION.

As supplementary to the consideration given by the National Association, during its meeting in Chicago, to the topics related to Industrial Education, it seems fitting to record here, that, at the customary annual meeting held in Washington, D. C., by The Department of Superintendence of the "National Educational Association," which was held February 14 to 16, 1888, the opening session of the first day was given to the consideration of Manual Training. Mr. Charles H. Ham, of Chicago, author of a work on this subject, based on the experimental Manual Training School of Chicago, Illinois, under the direction of Mr. Belfield, read a carefully prepared paper entitled "How and to what extent can Manual Training be engrafted on our system of Public Schools?"

Much of Mr. Ham's paper was given to the task of abusing the systems of education of the past, and to depicting the evil influences of a study of the classics; a line of argument upon which the advocates of scientific, and latterly, the friends of Industrial Education, seem inclined to expend undue energy; since, bad as the system of education pursued for the past few hundred years throughout Christendom may have been, it is well enough to remember that it was all there was, and, moreover, that it is the men bred in that learning, thoroughly trained in the classics, who have spoken the creative words which gave birth to the new education; for Francis Bacon and Charles Darwin were thoroughly trained after the old methods.

The advocates of Industrial Training have, however, a more practical reason for avoiding such inconsequent discussions, in the fact that most of the pupils in the public schools, whose interests they are seeking to promote, run no risk of being exposed to the dangerous influence of the classics. Indeed, one of the great advantages offered by this movement for industrial education is that it will have a tendency to keep public school children longer in attendance; so that, remaining till their minds are more mature, they will thereby be enabled to get more of value from the other studies which accompany the instruction in the use of tools.

Mr. Ham thinks the age of fourteen about as early as the boy should enter the Manual School; before that his muscular system is not sufficiently developed to enable him to begin the use of tools with advantage. He also is evidently strongly inclined to the opinion that these "Manual Training Schools" should be special schools, accessible to pupils desirous of such training.

He also suggested that no finality as to the public schools had been reached; that in the present movement they were committed to no hard and fast rules; that such methods as proved unsatisfactory could readily be dropped till a satisfactory programme was reached.

The responsibility for a thorough and successful systemizing of these new studies was now upon the school superintendents.

In the beginning of his paper Mr. Ham made the extraordinary assertion "that there is no longer occasion for directive intelligence," because, forsooth, that was a characteristic of the education given in "the slavery epoch," and "is not suitable to the epoch of freedom!" One wonders whether the Faculties of the various Schools of Technology, Mining Schools, and other like educational institutions, are quite ready to accede to this proposition. It would have seemed that, on the contrary, a strong plea for the increased superior training of intelligent directors of labor could have been based on the premises laid down by Mr. Ham, of existing increased intelligence on the part of the laborers!

Mr. Ham made the following statements in regard to Labor:

> Labor is as sacred as manhood, and hence a fit basis for education. Labor is not a commodity, *because no power can reduce it to possession in the hands of the alleged purchaser;* it is a spark of divinity. * * The social and economic conditions which confront us are of the most alarming nature, and educators cannot escape responsibility. * * The labor question has been raised and it must be settled justly. It will press more heavily upon our children than it does upon us. Let us prepare them for the discussion by making the schools the workshops of humanity.

He closed by urging that this industrial training of children would greatly tend to diminish child labor.

> The question of questions remains: How shall all children be gathered into the schools and kept there from the Kindergarten age to the age of physical maturity?

Superintendent Mac Alister, of Philadelphia, who had been appointed to open the discussion on the paper, being absent, Superintendent Marble, of Worcester, who was in the programme as the second disputant, followed with a paper wittily contesting many of the cherished propositions of the advocates of "the carpenter shop in the school basement." As Superintendent Marble's serious statements on these topics are to be found in paper XII of this Appendix, no abstract of these remarks will be given, — but, as many of the more earnest advocates of Manual Training seem to infer from Mr. Marble's caustic criticisms on the shifting arguments that have been presented by the friends of Manual Training during the past few years, that this energetic educator is opposed to all progress; it seems proper to state here a fact with which the early advocates of industrial art drawing are familiar, namely: that Superintendent Marble was one of the earliest and most efficient promoters of the introduction of Industrial Art Drawing in the schools of Worcester. It is also to be noted, that, while not an advocate of making Manual Training a part of the Public School system, he is, at present, promoting the establishment, by private citizens, of a special Manual Training School in his city, to which the boys of suitable age can be given access.

DR. NICHOLAS MURRAY BUTLER, PH. D., President of the Industrial Education Association and of the College for the Training of Teachers, New York City, next followed with a scholarly and practical exposition of the way in which the requisite time for instruction in Manual Training and the kindred studies grouped under the general head of Industrial Education can be secured in the schools. Dr. Butler illustrated his topic by a diagram on the blackboard. His remarks were all too brief, owing to the time limit necessarily enforced in the discussion of papers. At the request of the writer, Dr. Butler, who adds to his other duties that of "Lecturer on the History and Institutes of Education" at Columbia College, New York, has kindly consented to prepare for insertion here a similar diagram with the requisite exposition, which is offered as a contribution towards a practical solution of the problem which presents itself to every teacher when a new study seeks admittance to the school curriculum.

The following is Dr. Butler's paper:

(*a*) *HOW AND TO WHAT EXTENT CAN MANUAL TRAINING BE ENGRAFTED ON OUR SYSTEM OF PUBLIC SCHOOLS?*

Webster defines engraft as "to fix or set firmly or deeply" and this question above raised is not one of theory, but of ways and means. It may be paraphrased thus: How and to what extent can the training of the child's powers of expression by delineation and by construction, be fixed or set firmly and deeply in our public school course of study. We are not now discussing the philosophy of manual training. That stage is passed. It has been incontestably established that the powers of thought, expression by delineation and construction, the judgment and the executive faculty must be trained as well as the observation, the memory and the power to learn. The history of education, the history of civilization and the science of psychology all focus upon this point. It is no argument against the above sound conclusions to deprecate turning the schools into shops, to urge that the pupils are already overcrowded and that the teachers are overworked. No one of sane mind proposes to turn the schools into shops by the introduction of manual training any more than it is proposed to train Rankes and Bancrofts when the pupils are taught history. If shop-work is used as a means of manual training, it is because of its disciplinary value not because of its utility. It is only a means, not an end. It will be discarded whenever anything better adapted to accomplish the end in view is discovered, just as an old geography is thrown away when a better one is made.

MANUAL TRAINING URGED AS AN ESSENTIAL ELEMENT IN A RATIONAL COURSE OF STUDY.

Manual training cannot be treated as an annex or appendix to the traditional course of study. It does not claim admittance as a favor; it demands it as a right. The attempt now working in certain localities to add manual training as an extension to the present course of study cannot have full measure of success, if any. If manual training is psychologically and pedagogically necessary, then the curriculum must be overhauled with reference to its admission. We cannot increase the length of the school course, nor the length of the school day, nor the tasks now imposed on teacher and pupil. Therefore the engrafting of manual training involves the whole question of the course of study, and opens up a way to put the course of study in our common schools on a scientific and rational basis instead of its present empirical and haphazard one. This I believe can be done.

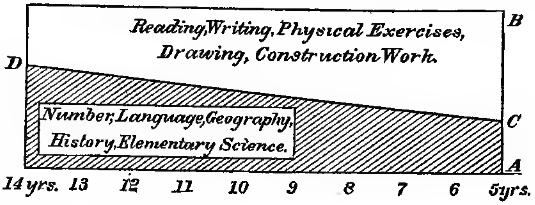
THE PRESENT COURSES OF STUDY, TRADITIONAL NOT SCIENTIFIC.

Any one who studies critically the development of the present course of study must be impressed with the fact that its growth has been artificial not natural, by accretion not by assimilation. Originally it consisted of what we call the rudiments. As more advanced instruction began to commend itself and one by one new subjects clamored for admission, a process of compression was used to make a place for them all. The result is what we may call the traditional course of study.

Its only excuse for existing is that it is traditional. In the broad attempt to crowd a something of everything, both the useful and ornamental, into the school course, the principle on which alone such a course can be based and defended has been utterly forgotten. A course of study exists to develop the mental faculties—all of them, not an empirical selection from them. It uses for this purpose certain means—studies which can be shown to appeal to the various faculties and to furnish food for them to live and grow upon. Psychology furnishes us a list of the mental faculties; psychology and experience together furnish us the proper means for their development. These means should be the finest possible consistent with proper mental development, not the greatest number possible, as those who preach the gospel of cram think. They should be selected on a scientific basis.

RELATIVE RATIO OF PROGRESSIVE STUDIES AT DIFFERENT AGES.

The outline for the draughting of a rational course of study is as follows:


Reading, Writing, Physical Exercises,
Drawing, Construction Work.
Number, Language, Geography,
History, Elementary Science.
B
D
C
A
14 yrs.
13
12
11
10
9
8
7
6
5 yrs.

The figure represents, by its heights, the length of the school days; by its width, the length of the school course. The school course is taken to include the primary and grammar grades, as the number of pupils who pursue a higher course is inconsiderable in comparison with the total number; and that stage need not be considered here. For our purposes the child's mental powers may be classed as receptive and expressive. By the former he is put in possession of new facts, by the latter he expresses them and thus makes them really his own. By means of the expressive powers he uses what he learns, and prevents his mind from becoming, like a dark attic, a receptacle for all the old, useless and worn-out articles that come in his way. Moreover, the stuffing a child with facts is not education. He must understand, realize, express or use these facts in order to derive the desired benefit from the possession of them. In the diagram the shaded portion represents the training of the receptive faculties, the unshaded portion represents the training of the expressive faculties. The line, CD, which divides them has not been drawn haphazard.

It is drawn as the science of psychology directs that it should be drawn. It represents graphically the fact that at five years of age, when as a rule the child is ready for the lowest primary grade, the powers of expression are more strongly marked than his powers of reception. At five years of age the only important faculty among the in-taking or receptive powers is sense perception, whereas the expressive powers are well represented by the rudiments of almost all human activities. Therefore the major portion of the school training between the ages of 5 and 6 should appeal to the powers of expression. Writing may be taught, the rudimentary steps of drawing, also, physical training should be given and instruction in reading begun. As the main receptive power at this age is sense-perception, the object lesson and Kindergarten methods will be used to develop it. As the child grows older the relative importance of the receptive powers increases, and gradually the ability to use the higher mental powers, conception, judgment and reasoning is gained. The course of study must adapt itself to this fact and the studies which exercise these powers, number, language, geography, history and elementary science, assume the place that belongs to them, and reading, writing, physical exercises drawing and construction work will not occupy so many hours each day. This fact is represented in the diagram, and by examining it the relative importance of the two sets of study at any age between 5 and 14 may be readily determined.

THE TERM "MANUAL TRAINING" DEFINED.

That part of the training of the expressive faculties which is included in the terms "drawing" and "construction work" is what is meant nowadays by manual training. If the term manual training is used in antithesis to mental training it is wrongly understood. Manual training, as I use the term, is mental training. It is mental training by means of manual training. It is included in the psychologically-determined course of study because it reaches important mental faculties which no other studies reach. It is also a most valuable and important stimulus to the receptive faculty of observation. The child can neither draw accurately nor construct correctly unless he observes acutely. Drawing is the basis of all so-called manual training, and develops the power of expression by delineation, which is more universal, more accurate, less difficult than expression by language. Delineation is the universal language. It knows no diverse speeches, no dialects. By means of the construction work the power of expression by construction is trained, as are also the judgment and executive faculty. The latter, whose importance cannot be overestimated, receives absolutely no training from the traditional course of study. Facts are learned as facts. It permits no handling of material, no knowledge of force in action, no adaptation of means to ends. Construction work provides all of these.

Drawing and construction work are reciprocal. They go on side by side throughout the course of study. They occupy more time proportionately when the child is 5 years of age, than when he is 12 or 14. But they are never absent from the course at any age. The drawing increases in difficulty as the thought which it is used to express increases in complexity. The construction work follows the same line of development — that of thought-complexity. It is represented at the various stages of the course by materials within the power of the child at each stage to handle and to use. Experience shows that the construction work is best represented by block-building, stick-laying, paper folding and simple clay work in the Kindergarten and lower primary grades, by paper cutting and clay work in the intermediate grades, and by wood-work for boys and sewing and cooking for girls in the higher grammar grades.

THE PROPOSED CHANGES ARE IN NO SENSE REVOLUTIONARY.

This course of study omits nothing that is really valuable in the traditional course, while in thoroughness, flexibility and completeness it is far superior to the latter. It has a plan for arithmetic, but not for logical puzzles and algebraic abstractions when taught under that head. It would teach reading and history together, and also writing and spelling, to economize time and labor. It would have the teacher teach and not merely stand by to help the pupil out of an unusually deep hole.

It is not for a moment asserted that any one of the studies named above is independent of the others and appeals to a single faculty only. The instruction and interdependence of studies is as complex and as complicated, as the interaction and interdependence of the human faculties. Nevertheless each element in this course serves some main purpose and serves it better than it could be served in any other way. Such a course is not final. It is subject to change to accord with increasing scientific knowledge and increasing experience. But it is fully abreast of our present knowledge and our present experience. The course which it is designed to supplant is abreast of neither. Nor is this course Procrustean — unqualifiedly alike for all localities and for all schools. It contains a principle and that principle is susceptible of various applications to suit divergent needs. The course it is designed to supplant contains no principle. It is an accident.

Superintendent W. B. **Powell**, of Washington, D. C., followed with a few remarks, urging the necessity of a continual logical course of industrial instruction through all the school years from the Kindergarten to the Manual Training School, and stated briefly what had been done in this city in beginning industrial education in the public schools; showing that the plan for introducing Manual Training, cooking, sewing, etc., as recorded on pages 112 and 113 of this volume, had been successfully put in operation; thus bringing Washington into line with Baltimore and Philadelphia, in its provision for industrial training in the public shools.

Mr. H. H. **Belfield**, Director Manual Training School, Chicago, Illinois, who followed; began by announcing the proposition that "no system of culture is worthy the name that is not broad enough to cover the idea of discipline and utility." He said that there should be Trade Schools, for entrance to which the public schools should fit the young.

He gave a brief, interesting statement showing how the Chicago School, of which he was in charge, "was founded by an association of merchants who knew the practical needs of the age. It was first advocated in the public press by a lawyer, Col. Augustus Jacobson, and by Charles H. Ham, neither of the two being a teacher."

He suggested that, possibly, teachers and many college-bred men, held too narrow, technical views of the nature of education, and queried: "Are not we schoolmasters disposed to believe that there is no education except *book* education? Do we not act on the hypothesis, even if we disclaim it, that the object of education is knowledge, ignoring the fundamental fact that the great end of education is *action through knowledge?* Pestalozzi said, "Education is the generation of Power." Huxley says, "What men need is as much knowledge as they can assimilate and organize into a basis for action." He closed with the following sentences:

> The child is mischievous because he has nothing else to do with his *hands*. In my judgment, manual training would pay its cost simply as an aid to discipline. In no school are there such opportunities for practical joking and other forms of mischief as in a manual training school, and in no school is there so little. The kindergarten is the great advance step in the proper training of the young child, but there is need of an intermediate class between that and the primary grade. The public sentiment has at length been reached on this subject, and the future is not in doubt. Manual training is demanded and will be granted. The schools will soon furnish this culture.

Hon. M. A. NEWELL, LL. D., State Superintendent of Maryland, being called on to continue the discussion, commented humorously upon the sarcastic utterances made by Superintendent Marble in *his* witty address antagonizing the propositions of the advocates of public Manual Training Schools.

HENRY RANDALL WAITE, of New York, expressed a belief in Manual Training, but was doubtful as to its general introduction in the schools of the country.

Superintendent WILLIAM E. ANDERSON, of Milwaukee, Wisconsin, urged some practical action, and said that without this it was of little avail to thrash over the same straw in annual debates. He therefore made a motion that the chair should appoint a committee of seven, who should report at the next annual meeting some practical methods of introducing industrial education in all grades of the public schools.

Mr. KENNEDY, of San Francisco, California, agreed very earnestly in the opinion that little of practical value had been said.

Dr. JEROME ALLEN, of New York, heartily supported Superintendent Anderson's motion, and eulogized the Kindergarten training as the first step in a continuous course through all grades of public schools. Superintendent Anderson's resolution for the appointment of the committee was passed unanimously.

Mr. HAM then closed the discussion in a few words in reply to Superintendent Marble's paper. He seemed to have somewhat misapprehended the position of Mr. Marble, in that he supposed him opposed to any industrial movement or to any progress in educational methods, apparently not being aware that Mr. Marble was one of the first promoters of the instruction of Industrial Art Drawing in the public schools, having, as school superintendent of the City of Worcester, Massachusetts, been among the first in Massachusetts to put drawing in all the city schools, and, at this very time, being active in aiding in the establishment in Worcester of a Manual Training School similar to that in Chicago, in not being a part of the public school system.

The critic, even if friendly, who uses the Socratic method, thereby obliging too sanguine supporters of novel ideas and untried schemes to carefully review their arguments and to make sure of each step, is not always a welcome guest, as Mr. Marble may occasionally have suspected; but, nevertheless, his provocative contributions to such discussions are by no means the least useful ones offered, even if they did no more than impart life and fire to the debates.

The session was an interesting one, and the discussion was animated and amusing, largely by reason of Mr. Marble's bristling paper.

The principal contribution likely to be of permanent value to educators for its practical suggestions will probably prove to have been the paper by Dr. Butler, given above.

Much will be expected from the labors of the committee appointed by President Dougherty, as directed by the resolution of Superintendent Anderson. This committee on Manual Training was announced the next day, as follows: W. E. Anderson, of Wisconsin; D. L. Kiehle, of Minnesota; W. B. Powell, of District of Columbia; Henry A. Wise, of Maryland; Superintendent Compton, of Ohio; J. W. Dickinson, of Massachusetts, and George Howland, of Illinois.

VIII.

INDUSTRIAL EDUCATION BEFORE THE NATIONAL EDUCATION ASSOCIATION IN SAN FRANCISCO JULY. 1888.

INTRODUCTION.

The volume* containing the report of the 1888 session of the National Educational Association, which was held in the city of San Francisco, California, in July of that year, not having come to hand until the proof sheets of the articles in this Appendix had been received from the printer, the notice of that meeting here given must, of necessity, be brief. This is the less to be regretted from the fact that the several features of Industrial Education were so fully considered during the session held at Chicago the year previous; as the copious extracts from the papers read and the discussions held at that meeting, given in the preceding paper, No. VI of this Appendix, abundantly demonstrate.

The reception given to the Association in San Francisco was characteristic of the renowned hospitality of the dwellers on the Pacific. At the opening of the session the Governor of the State, Hon. R. W. Waterman; the Mayor of the city, Hon. E. P. Pond; the State Superintendent of Education, Hon. Ira G. Hoitt; and the President of the State Teachers' Association, Professor Albert S. Cook, made speeches of welcome, which were responded to, on behalf of the visitors, by President Gove, Secretary Canfield, U. S. Commissioner of Education Dawson, Mr. Sheldon, of Boston, and Superintendent F. M. Campbell, of Oakland, Vice President for California. These addresses are given in full in the annual volume issued by the Association for 1888, already referred to.

In this volume some two hundred pages are given to the papers and discussions before the General Sessions of the Association. The topics treated in these meetings of the whole body were, First: "Literature in the Reading Courses of the Common Schools." Several papers were included under this title as was the case under each of the general "themes"; different phases of the common topic being treated in different papers, followed by a general discussion. Second: "How can our schools best prepare law-abiding and law-respecting citizens?" Third: "Current Criticism of Public Schools, and what Answer?" Fourth: "Practical Education." Under this head the special papers were "The Psychological View," by James H. Baker, of Denver, Colorado. "The Popular View; Education as a preparation to earn a living," by R. K. Buehrle, Lancaster, Pennsylvania. "Where should general education end and special education begin," by J. M. Greenwood, Kansas City, Missouri. Miss Josephine Locke, of St. Louis, and Messrs. Thompson, of Indiana, and Fairchild, of Kansas, took part in the discussion which followed the reading of these papers.

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* National Educational Association. Journal of Proceedings and Addresses. Session of the year 1888 held at San Francisco, California. Published by the Association. Topeka, Kansas Publishing House. 1888. Pp. 794.

Important papers were read and discussed by the National Council of Education. The report of these fills a hundred pages. The remainder of the volume is mostly given to the reports of the separate proceedings of the nine Departments into which the Association is divided. Three of these, namely, "Kindergarten," "Industrial," and "Art," relating directly to the special topics considered in this Report and in the papers and discussions given, are seen in a marked manner to interblend; the Kindergarten contemplating in its scope the possibility of Mechanical Industrial, Industrial Art, and High Art development.

In the Kindergarten Department the opening address by the President, Mrs. Eudora L. Hailman, of La Porte, Indiana, was read in her absence by Mrs. Sarah B. Cooper, of San Francisco, who followed this with a paper prepared by herself, entitled: "A Brief Résumé of Kindergarten Growth," in which due credit was given to Miss Peabody as the pioneer Kindergartner of America, and to Hon. William T. Harris, who, in 1873, as Superintendent of Education in St. Louis, recommended the adoption of the Kindergarten plan; and later, in conjunction with the generous aid given by Miss Blow, effected the establishment of the public Kindergarten in that city. This action by Superintendent Harris gave the impetus to the extending of this class of infant schools throughout the country, which, up to that time, had made little progress. The subsequent rapid spread of these schools has resulted, says Mrs. Cooper, in their establishment in nearly every State and Territory of the Union.

The other papers were, "The Educational Value of the Beautiful," by Nathan C. Schaeffer, Kutztown, Pennsylvania, and "An Ideal Professional Training School for Kindergartners and Teachers," by C. H. McGrew, San José, California. This last is a carefully wrought-out plan of systematic training from the Kindergarten to the University, illustrated with two charts, one entitled "Harmonious Education," and the other "Psychology of Childhood"; in which, arranged in concentric circles, the studies and occupations of the succeeding years of the child's training are set down, after the plan of the arrangement of the main building of the last Paris Exhibition, where the exhibits were arranged in similar concentric circles, the same class being on its own circle by whatever country it was shown; each country occupied a larger or smaller segment of the circles and extended to the extreme circumference.

In the discussion, Mrs. C. W. Dohrmann, of California, spoke of the service rendered by the Kindergarten in fitting the child for the public school, and Mrs. Kate D. Wiggin, also of California, spoke of the value of this Kindergarten Department, in Mr. McGrew's Ideal Professional School regarded "as a school of life for women," a very suggestive theme thoughtfully treated, namely, the impetus given to the development of the true woman in the girl, by the exercise of the motherly instinct in the care of children in the Kindergarten. A striking incident of the meeting of this department was when the Pundita Ramabai, a most interesting High Caste Hindu woman, was introduced to the audience and spoke concerning the proposed Kindergarten work which she sought to introduce among the child-widows of India.

The Department of Industrial Education held only three sessions. In his opening address President George T. Fairchild, of Manhattan, Kansas, presented the important subject he had chosen for his theme so clearly that I have thought it worthy of insertion here. It is entitled:

"*SOME LIMITATIONS IN INDUSTRIAL TRAINING.*"

"Being a known champion of industrial training as a part of education, I trust that no one will regard the title of this paper or its subject-matter in any other light than that of true enthusiasm. I believe most heartily in the idea, and in its success on trial. More than a dozen years since, a paper of mine before this very body committed me as a witness to its usefulness in agricultural colleges; and every year since, with far wider range of observation and more extended responsibility, has added to the certainty of my convictions. I believe the world needs far more of this training in the things of life along with its learning about life.

A WARNING AGAINST UNDUE ENTHUSIASM.

Yet the very earnestness of this faith in the idea makes me cautious. I am jealous of every unguarded rush of zeal which leaves wide gaps in our line of advancement open to attacks from the enemy. I believe that many grand ideas are retarded in the march of progress by over-zealous adherents, whose vaporings, being noisy in ebullition, are mistaken by earnest thinkers for the idea itself. The conquest is to be won, not by a rush and hurrah, but by the pervading influence of a real growth in our own methods of training. We do not need even to denounce the old methods; they have made our success. We need to carefully secure for each improvement a recognition on its merits, the universal principles of education being the tests, still, of every merit. For human nature has the same basis for all time, though added knowledge of that nature enables us to use it better. That is new truth which includes the old truths; "new, but not true," is the verdict upon that which contradicts the old in order to find itself a place. Sometimes, therefore, in such gatherings as ours, I have felt like pleading, "Save us from over-zealous friends." Indeed, it is with something of such a feeling that I ask you to-day to consider the necessary limitations of manual training as a means of education. The more carefully we draw for ourselves a true statement of the actual conditions, unfavorable as well as favorable, the surer we are to win a proper place in the world's work. Confused ideas are as useless as incomplete ones. Our distinctions must be definite, and our adaptation of parts perfect.

INDUSTRIAL TRAINING LIMITED IN TWO DIRECTIONS.

Now, judging from experience in many lines of training as a most interested observer, I find the range of real education in manual arts clearly limited in two directions. What can be done depends largely upon the individual human nature with which we have to deal; and, almost as largely, upon the peculiar social conditions under which we have that nature to train.

First, industrial training is always limited in its reach by human nature in individuals. Soul and body both are to be wrought upon at every stage of progress, or we miss our object. Working is not thinking, and thinking is not working, though both must be combined in accomplishment. The thinkers may be another set of men from the doers, as President Angell, of Michigan University, used so eloquently to prove. We wish to so combine thinking and doing in the training of youth that the great thinkers can lead in doing as well, and the doers can follow at least the thoughts of the great thinkers. The solution of a problem is not in the manipulation of the figures, but it is incomplete without this: so the manipulation of figures into the required answer is not the solution at all, unless clear thought has traced the logical necessity of relation in the steps of the process. Manual training as a part of education is like the manipulation of figures, an embodiment of a thought. It must and does find this *general* limitation to the medium ground between thinking and doing. *Accuracy* of *calculation* with *accuracy* of *performance* makes the educational feature. That act of mind or hand which involves mere imitation has but little of educational value, however useful. The precision of the Chinaman is an important element of utility, but he can scarcely be said to be educated into it. We must not be so drawn into admiration of the monkey-ingenuity of children and youth in imitation as to believe such training will prove an advance in educational methods. We are in more danger of accepting a neat imitation in wood, or clay, than we are in figures or letters, because the wood seems to have a utility of its own.

We are in danger of overestimating the exact imitation in comparison with the less exact independent work.

For these reasons the gradation of problems to the psychological and physiological development of each pupil is even more necessary than in the more familiar problem of mathematics and the natural sciences. The youth whose perceptive faculties are untrained must have problems of which he can perceive the parts exactly, or he simply does as the rest do. His comprehension must be kept in constant view while laying out work. If his thought is not clear beforehand, failure will be his best teacher; yet in such work he may succeed admirably to all outward appearance by a quick eye for similarities. I have found this fact to be a partial explanation of the seeming advantage which some dull students gain in such training. We must make our limitation clear to the embodiment of only such thoughts as can be comprehended. The qualities of a perfect square must be more real than those of any approximation to it in handicraft; and yet training may put the first. The best workman we ever trained was constantly tempted to put his tools in place of geometrical principles. He had worked in advance of his comprehension.

Again, for educational purposes, the problems of manual training must conform to a student's powers of generalization. The result of his effort is an illustration of a multitude of applications. The mortise and tenon are not simply two bits of wood fitted to each other, but an embodiment of a thought covering a host of necessities in building. The process of generalization must have reached out toward these many applications, or the work does little in the way of education. With this, the work gives precision to his thought. So much for the first point of strict limitation to the development of psychological faculties. It will bear indefinite study in the practical devising of systems of instruction.

THIS TRAINING TO BE EFFECTIVE MUST BE INDIVIDUAL.

The second limitation grows directly out of the first. Individual peculiarities of thought weigh more in such training than where the result is less thought of; and yet we are likely to consider them less. The effect is that instruction, to be real, must be more directly individual. The teacher in such work is compelled to push himself into the individual thoughts of his pupils, and the number of a class is limited by his power. I find that the best teacher must provide for a division of attention in spite of the most careful classification. While the discipline of a well-arranged shop may be perfect with forty benches, the hold of the instructor upon his pupils reaches no further than his interest in their individual thinking inspires them. A mere mechanic teaches but little, though he may make a grand show of finished work. On the other hand, the mere idealist may hold so near his pupils the abstractions on which their generalization is based that a large number gain no distinct training in the concrete illustration. We are limited to the moderate number, varying with ability and experience of the teacher, which can be influenced directly through insight into each peculiarity of thought. Classification ought to be well defined.

REPETITION ESSENTIAL AND YET MERE REPETITION IS NOT EDUCATIVE.

Third, in order to train as well as teach, the various steps of progress must be often repeated. The nervous and muscular system through which all skill is exhibited gain exactness, precision, only by repetition. At the same time, mere repetition is not education. Hence, in manual training as we think of it, there must be a limitation to such details as can be repeated in variety almost indefinitely, so that new problems stimulate thought while similar motions approach perfection in result. The limit is the same as every one has found in teaching writing or drawing. Much ingenuity must be exercised to extend the range of definite problems, progressive in their succession, and still affording indefinite training by repetition. I am glad to see the friends of shop-training stimulated to comparison of plans and devices.

Out of the third limitation there grows a danger from which I take a fourth. The few details mastered by repetition enough to give skill are most readily found in some particular line of work, as cabinet-making, or mechanical engineering. The result is then a technical, not a general, education — an unnatural bias in childhood that may hinder *real* education. The limitation is to such classes of problems as suggest a multitude of applications in all sorts of trades. This complicates the difficulties of indefinitely extending, off-hand, the advantages of such training. It is easy to find illustrations of the tendency toward the narrowing spirit of a trade where the shops are managed by most competent mechanics, and the better the work done the stronger the tendency. When classes are required to pursue such courses, those who fancy the trade follow it, while the rest get little training and less instruction.

DANGER THAT THE "PLAY" IDEA MAY PREDOMINATE.

The fifth limitation and the last of those growing out of student-nature which I will dwell upon, is from the ease with which such exercises dwindle into play. It has been observed that kindergarten practice sometimes turns out to be only a high type of amusement, rendering a child dependent upon amusement for incentive to diligence. I have seen shop-work of various kinds degenerate in a similar way. The Yankee boy whittles as he whistles, not so much for results in tune or toy, as "to keep his courage up"—to drive away *ennui*. It is easy to work upon this desire for play in the shop, to devise trinkets, and puzzles — to turn handles and spindles — to turn sticks into shavings even with the semblance of diligence and with little progress in either skill or intelligence. Industrial training, as a part of education, must show how each detail is related to correct thinking. Either the result, or the process, or both, must be connected with the world's wants by some evident relation. The perfection of a joint in wood-work has a meaning, and that meaning ought to be illustrated in the work by either success or failure. The outline of a chair-spindle has its unity, and that should be tested in the work. In this way the successful trainer finds his limitations, just as every good teacher does, in the necessary adaptation of means to ends for each student brought under his tutelage; and the danger of missing the mark in such a work, where the lines are new and untested, is far greater than in the more familiar kinds of instruction.

Another series of limitations is dependent upon the surroundings of the undertaking. All things are *relatively* good, or bad. This training is no exception.

THE INFLUENCE OF PUBLIC SENTIMENT.

First. I mention the general tone of sentiment in the community. Both trainer and student find the prevailing opinion either a stimulant or a sedative to enthusiasm. What the trainer can do with his pupils depends largely upon the expectations of all interested, and his efforts as well as his accomplishment are limited by these expectations. If the patrons of a school are afraid their children will be turned out mechanics by a course of manual training, the best teacher and trainer must first convert the sentiment before his training will do its best work. If the community see dollars in every blow of the hammer, and every stroke of the chisel, education will flag; for when the whirr of machinery sings to a neighborhood — like the canter of his horse to Tennyson's Northern Farmer — only "propotty, propotty, propotty," there is little range to be given to mechanical training beyond what will put a boy at the machine in the shortest time. False ideas of gentility sometimes crowd one to his wit's-end for devices that shall train against the shame of drudgery.

Second. The peculiar mechanical drift of particular localities suggests lines of least resistance in manual training. The ingenuity of the teacher is strained to overcome a tendency against the best interests of his students; for education needs to broaden the range of abilities. At the same time, to ignore this evident advantage in ready accomplishment is to lack good sense. So we have to acknowledge this limitation to what we can do most in.

THE QUESTION OF UTILITY; "CUI BONO?"

Third. Popular opinion of what is useful varies in different places and times. We find that the actual influence of training upon young people depends in no slight degree upon their ideals of utility. Just as they object to certain studies as without utility, so they decry certain forms of training as impracticable. This objection has with them all the more force from the acknowledged relation of such training to practical life. It is most difficult to persuade a youth whose ideal life is in the printing-office that his actual accomplishment in life will be increased by a year's training in wood and iron work. You and I may have no doubt of it, may even enforce the authority of our opinion upon him; and still his own opposing opinion brings an inertia which almost proves our judgment false in his particular case. Only the establishment of faith by a long series of experiences can remove such inertia, and even then the limitation remains, that you can do no more for a youth than his ideals of utility permit.

THE INCREASED INFLUENCE OF THE INDIVIDUAL TEACHER.

Fourth. As we all know, successful instruction involves the personal force of the instructor, In my experience such force is more noticeable in manual training than in other teaching. Any peculiarities of habit, manner, form, influence more in such effort, when the *method* is of first importance. The shop-instructor is far more a handler of his pupils than any class-room teacher can be. This fact, while it adds importance to this kind of instruction, at the same time places limitations upon its extension. The choice of such trainers is more important for the unconscious tuition overshadowing all the rest. Thus the personal equation, after methods have been fully settled, will always remain large, and make the system a delicate one to handle. Especial limitations are to be felt in this direction by those to whose responsibility the pioneer work belongs.

INCREASED DIFFICULTY OF CLASSIFYING PUPILS.

Fifth, there is an almost endless variety of circumstances in the outdoor or home life of the pupils, any or all of which may have a bearing upon their progress. This is true in all forms of education, but is more felt in this training because the outside *doing* is more likely to fall into line with school *doing* than with thinking. This brings, not a new but a larger element of uncertainty into the teacher's plans, and calls for greater tact and judgment. Some boys are so related to work at home that more than twice the practical insight that others have is gained from their daily lesson through double application. This makes more difficult the classification, and brings new problems into the methods. This limits the immediate application of such training to towns where the measure of such outdoor training can be most easily taken, or to central schools where most of the pupils depend wholly upon their classwork for training.

THE EXPENSE OF EQUIPPING SUCH A SCHOOL.

Sixth, the work in this line must be satisfactorily equipped with tools and fit places for work. The *plant* is of considerable importance — far more than in ordinary teaching of intellectual truths. "Dr. Hopkins on the end of a log" might expound a perfect philosophy; but it takes more than the ingenuity of an Edison even, to train for the arts without some of the tools of the arts. So there are places where the needed equipment for any training worthy the name cannot be had. Luckily the log academy and the "dug-out" college exist where the ordinary struggle for life is a manual training fitted to the necessities of pioneer youth, and we need not worry over the fact that all cannot share equal facilities. Yet it must be granted that the costly fittings for a thorough training school are necessarily limited to communities where wealth can be depended upon to bear its proper burdens for popular education. With the almost perfect communication over the world, a greater uniformity is certain in the means and modes of living. Expenditures for schools and school furniture more than keep pace with the rest of life's necessities in our pioneer states; yet who can believe that Western towns ought to do with industrial training all that older cities must. In other things the youth cannot wait; in this they may.

PREJUDICES AGAINST THIS NEW PHASE OF EDUCATION RECOGNIZED.

Again, there is still unconquered prejudice to be met all over the land. It lingers in the minds of some of our most thoughtful educators. The best students of educational methods have not all yielded assent to the claims of this new contestant for our faith. The aristocracy of learning has held aloof some who might otherwise have taken kindly to the new-comer. For, dispute the fact as we may, a large part of our most respected friends — educated, refined, wealthy, influential, the very cream of society — look upon manual training in every form as a catering to lower wants; a bread-and-butter policy, suited to the wants of the drudging masses, but in no way elevating to the whole people. There are people whose sympathies go out toward the weak and unfortunate, and a charity school of instruction in arts, or trades, or domestic acquirements, will gain their hearty indorsement. But they cannot grasp the notion that men and women need development in doing as well as in being — in fact, for the sake of being. To them, the very sight of such facilities for training as a well-equipped industrial school furnishes, suggests only "hewers of wood and drawers of water," — hirelings, journeymen, and kitchen-maids. Within this month, I have found this suggestion crowding uppermost in an ardent admirer — from a distance — of my own college. Now, it is no disgrace to such institutions to be ranked as philanthropic advances for the multitude. I am glad when all will concede that such training lifts above the danger of poverty; it is a proof of its utility to humanity, and of its adaptation to the needs of the race. But this feeling is a limitation upon the spread of useful means and methods. We have no right to expect *our proofs* to be readily accepted against the odds of all this conservatism of thought and sentiment. We need to feel, ourselves, this limitation in all its reality, and meet the difficulty with the calm planning, and explanation, and devising, by which all progress in scientific learning has been made.

EXPERIMENTS ARE NECESSARILY EXPENSIVE.

Finally, experiments are necessarily costly in this good work. We need to make them with all the careful insight of a Faraday or a Henry in science. The actual results, not our wishes, are to decide upon the permanence of our hold upon the progressing world. If we do true work — hold to the line of absolute truth — our success is not uncertain. The world is ready to accept our methods as they are proved worthy. But too hasty generalizations, and too exuberant expectations, will bring waste — waste of money in unsuccessful undertakings; of enthusiasm, in disappointed hopes; of faith, in dissatisfied friends; of opportunity, in multiplied "I told you so's." The more clearly we point out to ourselves the weak points in our aims and methods, the more accurately we estimate the limitations of our undertaking, the surer our progress is. It would take but a few failures, comparatively, to bring us backward many years in the struggles for a fair recognition, and false hopes must fail.

WE MUST BUILD ON THE BED FOUNDATION.

In conclusion, let us accept the fact that all our new improvements must be built upon the old establishment. We are not going to make the race over, to use our improved methods upon. All that past centuries have gained we need still, as the foundation of our new civilization. We came out of barbarism by means of barbarism. So our best educational methods have grown out of the crude ones by means of the crude beginning. We can move to higher points only by standing upon those already reached. Let us, then, welcome our conservative friends as the means of severely testing our supposed improvements. We cannot afford to do without them. We cannot afford to build our establishment like the cheap tenement-house, to have it crush us all in a heap when story after story is filled. We can know *on* what we build, *to* what we build from day to day, and so reach the heaven of our hopes; but every inch of progress must be tested by the established principles of education.

The above paper, by President Fairchild, which is especially to be commended to over-zealous advocates, is well worthy the consideration of all, either friends or critics, who are in any degree interested in the present movement. It is a calm, dispassionate, intelligent consideration of the situation of this movement by one of its earnest supporters.

A brief discussion, participated in by MESSRS. WOODWARD, of St. Louis, RICHARDS, of Washington, and ORDWAY, of New Orleans, followed the reading of this paper, each concurred with the statements of President Fairchild. PROFESSOR JOHN M. ORDWAY, now in charge of the Mechanical Department of Tulane University, in closing the discussion, said:

That damage to manual training has been done by over-zealous advocates, who have maintained that manual training is a panacea for all the evils in education. The mistake has been made of advocating the establishment by the State of trade schools, which should be maintained by private means. The erroneous idea that manual training is designed to teach boys to earn money existed in Europe, as well as in the United States, but has been abandoned there. The argument against manual training — that it is not education — was used for years against drawing; but there are more arguments in favor of manual training as a means of education than there are in favor of drawing. He agreed with Mr. Woodward, that a mechanic, as teacher, was inclined to take the view of the "boss mechanic" rather than the view of the teacher.

MR. R. S. THOMPSON, of Pennsylvania, read a paper entitled "A brief Summary of the Progress of Industrial Education during the year ending July 1, 1888." Messrs. Richards, of Washington, D. C., T. O. Crawford, of California, M. C. Fernald, of Maine, J. D. Letcher, of Oregon, and J. M. Ordway, of New Orleans, took part in the brief discussion.

MR. CRAWFORD said the four years experience in the Oakland schools, of work in wood and iron, had proved the experiment a success. MR. FERNALD noted the omission of any mention in the paper of the work done in the Maine State College of Agriculture and Mechanic Arts.

MR. ZALMON RICHARDS, of Washington, D. C., read a paper entitled "The Relation of Industrial to Intellectual and Moral Training in our Public Schools," drawing largely for illustration from personal experience in teaching. MR. T. O. CRAWFORD, of Oakland, California, read a long, carefully prepared paper on "The Educational Power and the utility of Industrial Education, and of Manual Training in our Grammar Schools." From the following opening sentences of his paper, the general trend of his argument can be known.

In order that there may be no mistake as to the common ground of this discussion, I present what I understand the word *education* to mean.

* * * * * * *

The unfolding of the life-principle in the seed by the organizing force at work *is the oak.* So it seems to me, it is with the result we call education. It is the unfolding of the infolded, organizing life. It is not something erected on a foundation prepared, but an outgrowth, according to unvarying law, of a life-principle. The more complete the environment is, the greater will the organized product be, and so on, till a perfected environment produces a completed organization. As a part, then, of an environment that is the occasion of the development of the human being, I am to offer industrial education and manual training. I mean by industrial education, instruction about work and work in the various commercial industries of the world. Manual training is the employment of the great factor of human progress, the hand. In general terms, any organ of the body engaged in the production of wealth, is rightfully a factor under the term manual training. We find in the human body *three* of these factors: one directive the eye, and two constructive, the hand and the foot. When these three are brought into actual operation, working together for the accomplishment of some end, the work and the result to the factors is manual training.

Believing, as I do, most firmly in the educating force as well as in the usefulness of a system that shall develop by doing, I do not hesitate to offer it as the best means to a real education to those who believe the end of education is being, and as of the highest utility to those who believe that the end of education is doing. Being and doing embrace all there is to be drawn from any life, and that system which produces these in their highest development is the one to be adopted.

It is quite evident, I think, that in order to unfold anything, and make it simple, we must thoroughly understand the order of infolding. If we get hold of the right end of the wound skein, we shall have no trouble in unwinding it. If we can find the natural method of development, our work is confined to preparing the right environment. Premising, then, that the natural development is the true one, and that all educational force is along that line, I inquire, What is the natural method? Let us, if possible, consider this as a child does.

His positions were illustrated by many anecdotes showing the results of awakening the interest of scholars in natural objects. He closes his plea for this training as follows:

MANUAL TRAINING DEVELOPS HABITS OF EXACT OBSERVATION.

I take it that the power to observe, brought forth and trained by any system, is good for all investigation. How can this necessary faculty be so thoroughly trained as in making experiments with things? Every experiment is a question. That which comes is an answer to some question, whether it be to one we ask or not. When we have once acquired the habit of experimenting we become independent thinkers—then and only then does real education begin. We claim for manual training that it cultivates as nothing else can do habits of exactness. There can be no cutting of corners if we would have good work. The use of the rule and of the square in measuring patterns, it may be, will do more to train the eye to exactness than all the text-books in the world. After the marking, the actual practice in sawing, planing, filing, boring, mortising, is the best royal road to the education of the hand. The properties of things are made plain only by work in those things, and an acquaintance with the laws of matter, as to mass and molecule, is gained only by a hand-to-hand struggle. Another result of the real work in manual training, is the creation of a love of reading and of study along in the line of any particular work. Only last week I listened with a great deal of interest to a conversation between two young architects concerning the wonderful work of another architect, and it came out that both had been studying the published life and works of this man, one of them paying over one hundred dollars for a certain edition.

MANUAL TRAINING LEADS TO A WIDER KNOWLEDGE.

Thus it is that some definite line of work laid out and followed almost compels the careful study of the work of like craftsmen.

Not only is this true along the same line of work, but it increases study of contributing employments. Thus the miner must, if he be intelligently successful, study geological formation; must know in what kind of rock to look for gold: must understand the effect of different kinds of explosions; must be able to use intelligently and economically the quicksilver; in short, must read and study and experiment in many ways outside of his real work.

The machinist is interested in and studies moulding and forging iron, and is quite likely to understand mining and smelting the ore. The miller, besides being up to the times in his own particular trade, studies the use of machinery, its proper care and setting-up, the proportion of work done by one machine compared with that done by another. He is interested in the different kinds of wheat or other grain that he uses, and must know of the climate and soil of a particular place before he will contract for his year's supply, for he knows that a few days more or less of sunshine, the absence of certain elements in the soil, will show at the end of the year on the hundreds of thousands of bushels of grain that he has ground, a gain or loss on his balance-sheet. This habit of studying what others know about a thing is very important; for what we know about a thing and what others have published about it, is all that is known about it.

In the school in every school district in the land I would have as adjuncts thereto the studying and practice of every industry that could be reached by its pupils. I would call in as helpers the carpenters, the joiners, the blacksmiths, the machinists, the farmers, the doctors, the lawyers, the merchants, the book-keepers, the bankers, and the capitalists. If any of these citizens could not come to the school-house, then I would take the pupils to them. I would make the generation, full of experience, that is moving across and off the stage of busy life, help by its advice and experience those coming on. There has been no such closeness between the real builders of society and the young growing up into society as there should have been.

THE MORAL VALUE OF INDUSTRIAL OCCUPATION.

I come now to the last thought of this discussion—the moral power there is in a system of manual and industrial training. "The devil never goes where he hears the anvil's ring," is an old saying; meaning of course, that industry and crime are not companions. The old saying, "Idleness is the mother of vice," sings in the same strain. In a conversation with John Macomb, the warden of the California State prison at San Quentin, I stated to him the ascertained fact in a neighboring State, that only fifteen per cent. of the inmates had, prior to being committed, learned a trade, while over sixty per cent. had a grammar-school education. He answered that from his observation he had no doubt a like percentage of non-tradesmen would be found in the one or two thousand convicts found there. These statistics mean a great deal. If the public-school system has been instrumental in starting forty per cent. of the boys in the right road, what would it not do if to it were added the real educational force of manual training?

Our boys do not, in both cases, go to perdition because they want to go there. In many cases, by a lack of training in anything that will enable them to get their daily bread, they are forced to acts of dishonesty in order to provide the necessary things of life. As I stand before you to-day, I believe it to be a crime before God to educate any boy or girl up to a state of want, and cultivate appetite, and not at the same time put in their hands the means of honestly supplying such wants and appetites. When boys and girls are taught directly, or indirectly, that they are above manual labor, that it is beneath them to earn their daily bread by the sweat of their brow, not only is a wrong done to the State in depriving it of a working factor, but a wrong is done to the child, and the foundation laid for idleness, vice, and crime. Our system magnifies the nobility and worth of labor. It points to our farms, to our granaries, to our work shops, our warehouses, our ships, and our merchandise; to our commerce, to our railroads, canals, bridges, our tunnels, our steam engines, our pavilions, our fair-buildings, and to our homes, and says: "Behold my handiwork." The earth produces the raw material; man is to mould and to fashion it, to subdue it; and his crown of excellence is emblazoned with these words: "Behold what my hand hath wrought."

The question which confronts us is a grave one. What shall we do with the ten millions of school children in the land? Shall we train them to remember simply; to get what somebody else has digested; to toil for naught; or shall we take hold of them and ask them to see, to observe, to compare, to classify? Shall the most perfect of all things in the material world—the hand—be exercised not at all, or only in play, and thus lose the power to do? Shall we not rather educate every power of the whole being, and by the use in manual training of the hand, guided by the eye and put into active operation by the busy brain, educate fully and symmetrically?

A lively discussion, participated in by a large number of speakers, followed, in which any moral influence of manual training, as distict from that of other kinds of education, was questioned; the work for girls was discussed and instances of instruction in sewing, cooking, wood-carving, and even in one instance in carpentry were recited.

A paper on "The Relation of Manual Training Schools to Technical Schools," by Professor C. M. Woodward, of St. Louis, Missouri, completes the list of papers read before this Department. From this paper the following paragraphs, defining the classes of schools, are taken:

And first, let me clear up some of the confusion which exists in the public mind in regard to the functions of a manual-training school.

To begin with, it is not a technical school. Technical schools, schools of technology, polytechnic schools, are all the same, or should be all the same. If we wish our schools to be generally understood, we must give them intelligible names.

* * * * * * *

To be sure, we have plenty of "industrial schools," but falsely so called. Just as no school for boys under thirteen years of age can properly be called a "technical" school, so no school for general training in drawing, and the use of wood-working and metal-working tools, can properly be called either technical or industrial. The school has a new function, and it must have a new name.

ORIGIN OF THE NAME OF THE "MANUAL TRAINING SCHOOL."

The name I proposed for the St. Louis school, in 1879, was that of "Manual-Training School." It has met with much favor, both in this country and in England; and though the etymologists have been trying to make it cover a great deal that was not intended, it is likely to be generally adopted. Hence, I urge upon all teachers and school officers who are responsible for the names applied to their schools, to adopt this name for those higher grammar or secondary grades which systematically incorporate line-drawing and instruction in the theory and use of tools into their course of study.

THE SEVERAL CLASSES OF SCHOOLS DISCRIMINATED.

We have, then, to recapitulate, three kinds of schools which are to be clearly distinguished: 1, manual-training schools; 2, trade or industrial schools; and 3, technical schools.

The first and last are related as successive members of a system. The graduate of the manual enters the technical school as a freshman. The relation of the trade school to the others is not clearly established; it does not exist sufficiently to render a definite statement possible. It may be parallel with the manual or it may follow it, according to its grade and purpose. If it sets out to train ordinary first-class journey-men, using for that purpose training shops and the class methods of instruction, it runs parallel with the manual school, but reverses the manual programme of two hours per day in shop and all the rest of the time in study, recitations, and drawing; and gives six or eight or ten hours per day to shop-work, and the rest of the time to drawing and study. Of course the journeyman turned out under such circumstances is a very different thing from the graduate of the manual. He has learned a trade and he is prepared to follow it, and he is prepared for nothing else. His shop instruction has not taken a wide range like that of our manual boy who has worked impartially at the wood-bench, the speed-lathe, the anvil, the moulding-bench, the engine lathe, the planer, the drill-press, the vise, and the draughting-stand, as well as carried on his work in science, literature, and mathematics.

If on the other hand the trade school is of a higher grade, and proposes to train foremen and master workmen, it will follow the manual-training school, taking its graduates, or such as find themselves fitted and disposed for such careers, and give them the full details of a mechanical trade in short order. The superintendent of the Missouri Pacific shops in St. Louis wrote me that he had tried several manual training boys as apprentices, and that he would gladly fill his shops with such boys if he could get them. He found them apt, alert, ambitious, and attentive, and they soon distanced boys of the same age who had spent as many years in the shops as the manual boys had in their school. This gives some indication of the general and special value of the training the school gives. It shows that those who enter mechanical pursuits after a course in a manual school are to raise those pursuits from the level of mere trades, and to make them take on some of the characteristics of professions. This to my mind is one of the great missions of manual education.

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THE MANUAL TRAINING SCHOOL INSPIRES TO HIGHER EDUCATION.

But in point of fact, very few of the graduates of the manual-training school become mechanics in the ordinary sense of that word. While profiting greatly and consciously by their contact with tools and practical methods, they find brighter and more promising fields than that of the worker for daily wages. Their drawing, their tool-work, their mathematics, and their general intelligence, fit them to be valuable assistants in a great variety of semi-clerical, semi-industrial work which is both pleasant and lucrative.

But the most popular choice of manual graduates is that of higher education; and in courses of higher study, so far as my observation goes, they are eminently successful. At present, the largest feeder of the university is the manual-training school. Its graduates are found in every class—freshman, sophomore, junior, senior, and fifth-year; and in all they are characterized by clear-thinking, and fondness for severe intellectual work. In view of the great influence which manual-training schools are thus exerting upon technical schools, the question of their relationship is very pertinent. * * *

THE VALUE OF A KNOWLEDGE OF LATIN TO TECHNICAL STUDENTS.

No technical student should be ignorant of the elements of Latin, and a fair reading command of at least one modern language in addition to his own. No study of words is so fruitful in clear analysis and a high appreciation of the importance of slight changes of form, of endings, and auxiliaries, as that of Latin. It matters comparatively little whether the student remembers in after years the vocabulary or the exact forms of Latin verbs; the important thing is that he will never look upon any language without feeling the influence of his Latin study. Either French, German, or Spanish, should be carefully studied at least one year before entering the technical school.

IMPORTANCE OF A THOROUGH TRAINING IN DRAWING.

Experience has shown that the drawing course can be carried much farther in the preparatory schools than was formerly supposed possible. The drawings now on exhibition in the Pavilion show what can be done with boys of high-school grade in a manual-training school. In the first place, they readily master orthographic and isometric projections, and employ them naturally in both freehand and instrumental work. They rapidly become expert in the use of tee-square, triangles, drawing-pen and brush, using India ink or colors. Accuracy, clearness and finish are acquired by systematic study of elements, and there is no lack of interest, though picture-making is very rarely indulged in. A certain numer of very instructive drawings must be made by each student to illustrate abstract principles and to represent ideal forms; but in all cases where it is possible to draw from objects, objects only should be used.

In the selection of objects, great care should be taken to find simple ones, and yet a wide variety. Pupils are rarely fit to make their own selections. Some of the elementary principles of descriptive geometry may be introduced. With the exception of a little conventional perspective, so called, I would leave perspective for the technical school.

UTILITY OF TRAINING IN ELEMENTARY TOOL WORK.

The elements of tool-work in woods and metals I regard as eminently appropriate to the educational work in the manual-training school. It is admirably fitted to meet the physical, mental, and moral natures of all healthy boys from the age of thirteen to eighteen. I make this statement without any reservation whatever. I am speaking now about manual training-schools, but were I talking about classical schools which do not have tool-work in their course of study, I should say the same thing; nay, I think I should say it with greater emphasis in reference to those classical schools which afford so little opportunity for dealing with the concrete, and for getting primitive notions of the laws and properties of matter and force.

The discussion following this paper is given here in full and completes the account of the proceedings in this Department.

W. G. RAYMOND, of California, said that the most prevailing fault of our common method of education is the turning out half-educated men. The object of the technical school is to teach men to manage the forces of nature. What better way to teach a man to handle things than to have him handle things? In the technical school the student is taught the theory of strength of materials; he learns this much more easily and readily if he has worked in and with these materials.

MR. KROLL, of St. Louis, spoke of the danger of a popular opinion that a manual-training school is simply a tool-using school, while it is in reality a high school, with certain studies omitted and others added. Mr. Kroll claimed that the manual-training school gives a general education, and illustrated by reference to the curriculum, and criticised the technological school curriculum as too narrow.

JOHN M. ORDWAY, of New Orleans, said, that while the manual-training school does fit for the technological school better than any other school, it also fits for all other schools, and for actual life. In biology and chemistry, the best students are those who have had such culture, which is a training for laboratory work. The skill acquired in the manual-training school assists in and prepares for laboratory work in many departments. In Tulane University *every* student must take drawing and manual training, no matter what course is contemplated; and the result is very perceptible and very beneficial in leading them to think.

A question having been asked by GEO. H. ATKINSON, of Portland, in regard to manual training for girls, MR. WOODWARD gave a brief account of the girl's work in the Toledo high school, and PRESIDENT FAIRCHILD described the work of the Kansas State Agricultural College, including dressmaking and cooking, both of which topics are taught scientifically and practically. The cooking follows a course in chemistry. A course in the dairy follows, including the domestic manufacture of butter. The course in drawing is the same for both sexes. The work with compound microscope has been found to be aided by the preceding work with the apparatus of the various laboratories.

IX.

THE SWEDISH SLOJD INSTRUCTION.—A COMPILATION BY I. EDWARDS CLARKE.

INTRODUCTION.

This phase of manual training was first brought to the notice of American Educators generally by the special report of a Committee of the Massachusetts Board of Education, given in the Forty-sixth Annual Report of the Board, issued January, 1883, introducing and commending the brief account, with accompanying papers, by Prof. John M. Ordway, of the Massachusetts School of Technology, of a visit to Sweden in the summer of 1882. The translated papers comprised a brief article in an educational journal in 1882, by Otto Salomon, PH. D.,* and a very full report of an extended tour of inspection throughout Sweden, undertaken in 1880 by H. F. Kjennerud, School Superintendent of Christiana, Norway.

The report by the Norwegian School Superintendent is entitled "Work Schools for boys in Town and Country, their object and arrangement." Professor Ordway's brief introduction is entitled "Hand-work Instruction in Sweden." The special report by the committee of the Massachusetts School Board entitled "Manual Training in the Common Schools" was given in full in Part I of this Report (see Part I, page 67), as an indication of the awakening interest in industrial training.

Doubt was, however, there expressed by the present writer as to whether the methods adapted to Swedish communities were exactly suited to develop the artistic nature of young Americans, which, it was pointed out, was the main purpose had in view by the advocates of the introduction of Industrial Art Drawing in the public schools.

It seems clear, from the report of the Norwegian educator, that in a very large proportion of the schools in Sweden the industrial motive, rather than the pedagogic, prevailed both with teachers and parents. The *Slöjd* schools were at first popular, partly because the children made articles which were useful at home, and for which, if not needed for home use, they could get money; it was thought, too, that this work directly fitted them to earn money in after life, and the peasant parents could understand the practical worth of such training; but, as might be anticipated, by and by the demand for such articles grew less as the supply increased and as machinery was introduced in the trades of wood working, and the practical value of the school training was thereby lessened. Various trades and industries were attempted, but with indifferent success.

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* This was the latest of a series of four articles by the same author, who is the well-known Director of the Normal School for Slöjd Instruction at Nääs, Sweden, on "*Slöjd* Schools and Common Schools," published respectively in 1876, 1878, 1880, 1882.

Director Otto Salomon, of the Nääs school, seems to have first seized on and developed the pedagogical idea, and, after many experiments, to have settled on a series of classified progressive model forms for the exercises in wood cutting, designed only for their pedagogic use, which are known as "*Slöjd* in wood," and are taught in the "Seminary for Teachers" at Nääs, of which he is the Director.

As by degrees the American advocates of Manual Training in schools have come more fully to urge its adoption on pedagogical grounds alone, the methods adopted by Director Salomon have attracted greater attention. In the desire to find some practical method of continuing the infantile hand training of the Kindergarten through the intermediate schools till the child is old enough to enter the High School and the Manual Training School proper, attention has been turned to the *Slöjd* methods, and, in the opinion of some, this knife work in wood furnishes the long-sought desideratum.

As appears in Miss Marwedel's paper in Appendix "J," that enthusiastic Kindergartener thinks the desired "missing link" has been found in the special forms of knife work in pasteboard and wood cutting, which are taught by Miss Eva Rodhe, of Gothenburg, Sweden, and Director Franz Hertel, of the Manual Labor Training School of Zwickau, Saxony.

Miss Marwedel recognizes more fully than many of the advocates of a "practical" industrial education seem to do, the importance of developing the æsthetic nature of the child simultaneously with his acquisition of manual dexterity, which is a fundamental feature of Fröbel's methods.

In the admirable series of contemporary educational publications issued by the New York Industrial Association, in which the latest movements in the educational world, especially those relating to Industrial Education, are recorded, under the careful editorship of Dr. Butler, the President of the Association, "*Slöjd*" has recently filled a large place, no less than five "Leaflets" and three "Monographs" having been given to this subject within a single year.* From these, and from the brief paper by Director Salomon, translated by Professor Ordway, the following statements are compiled:

SLÖJD, THE WORD AND THE METHOD.

The meaning and the pronunciation of this new word are alike problematical to English-speaking people ignorant of the Norse languages. Professor Ordway gives no clue to its pronunciation, and says that he adopts it because it has no exact equivalent in English. It means, he says, work with the hands with simple tools. The Norwegian Superintendent, whose report he gives, also informs *his* countrymen that "*Slöjd*, a word derived from the old Norse, is, in the signification in which it will be used here, a peculiar Swedish word, the meaning of which is very comprehensive and difficult to define, but which it is convenient and natural in this paper to adopt from the Swedish." He tells them also that they must learn its meaning from the context.

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*See "Educational Leaflets," Nos. 8 and 15, 1888; Nos. 26, 29, and 36 of 1889. "Monographs," No. 6 of Vol. I, 1888, and Nos. 1 and 2 of Vol. II, 1889. These inexpensive publications, of interest to all Educators, can be obtained by addressing the Registrar of the College for the Training of Teachers, No. 9 University Place, New York.

Principal Robert P. Keep, in an article on Swedish Manual Training, published in the Academy, September, 1887, says:

"*Slöjd* (etymologically identical with English 'sleight'), manual dexterity, 'sleight of hand,' is the Scandinavian word which designates manual training, given in the common schools of Sweden, to volunteer scholars outside of school hours. This training is now considered an important item in the equipment of a Swedish teacher."

Director Sluys, of Brussels, Belgium, reporting to *his* countrymen, says:

The word Slöjd is a purely Swedish expression, and it is impossible to translate it into any other tongue; it designates manual work peculiar to schools, and domestic work, and in itself proves that this education is really national. Slöjd is applied to all work which does not belong strictly to any definite trade. Thus, there are many bodies of tradesmen who work in wood — carpenters, turners, carvers, basket-makers, etc.; and while the Slöjd is no one of these in particular, yet it touches all, in that it comprehends all. Another character of the Slöjd is that it does not admit of the division of labor, or piece-work.

When the construction of an object calls for a combination of several branches of trades, it does not belong to the Slöjd. In the Slöjd the same individual completely finishes the object, even when the latter calls for work in different kinds of raw material.

It seems, then, it is not only English speaking people who find the word untranslatable. Our thanks are due to Dr. Keep for the clearest suggestion of an English equivalent; yet that is not wholly free from an unpleasant significance, for "sleight" is dexterity used for an unworthy purpose; for deception, rather than merely an exercise of honest skill.

None of these writers have condescended to enlighten us as to the pronunciation of this strange word till Dr. Carpenter, translating an article by Director Salomon, for a "Monograph," gets over the difficulty of definition by claiming that the word has become naturalized in English and needs no translation, but kindly condescends to remark—"once for all" that the Swedish "öj is practically equivalent to the English oi";—for which grace, much thanks. Our word is, then, in English, sloid, or *sloyd*, as some prefer to spell it.

From the several educational authors we may fairly draw the deduction that, while Slöjd means many other things, even as applied to many of the schools of Sweden, as well as in its wider significance, it means only, when used by American educators,—and this includes also the English educational writers on the topic,—a progressive course of exercises in wood working as taught by Director Salomon, in the "Seminary for Teachers of Manual Training" at Nääs, Sweden.

A course in an English school gives a series of thirty-three articles to be made by the pupils instead of the one hundred models used in the course at Nääs; but the principle of arranging the models in a progressive series is the same.

As to the "method". On this point M. Sluys, in his report, which is freely quoted later in this paper, says:

THE METHOD OF NÄÄS.*

If we call that *method* which is a rational and systematic progress towards a well-defined object, manual training in the school of Nääs constitutes a method indeed, and one that possesses an unquestionable claim to originalty. Nothing in this system is left to chance. It is the result of experiments covering many years, with the constant desire of giving practical form and efficiency to primary instruction in manual work. M. Salomon is in favor of the modern conception of the common school, and has endeavored to be faithful to the fundamental principles of the science of education concerning which there has been little ground of difference since Montaigne, Coménius, Rosseau, Pestalozzi and Fröbel.

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*See page 39, volume II. No. 2, of Monographs of The Industrial Education Association, New York, March, 1889.

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Several pages enforcing the necessity, and stating the purpose, of introducing Manual Training in the primary schools follow; in which the wisdom of thus taking advantage of the natural activity of the young child to train the hand is suggested, the teaching of trades is contemned, and the pedagogical value of Manual Training enlarged upon, while especial emphasis is given to its influence in developing in the minds of the children respect and love for labor. Its hygienic value is also dwelt upon as furnishing a counterpoise to too close mental work by the pupils in the schools of higher grades. This section of M. Sluys's report closes thus:

> Such are the important general considerations which together characterize the work of manual training from the pedagogic point of view. We sum them up in saying that its object is: (1) That the child may acquire general manual dexterity. (2) To awaken in him the habit and love of work. (3) To promote spontaneity and originality. (4) To convince him that order and correctness are essential elements of progress. (5) To develop the faculties of attention and perception. (6) To make the child earnest and persevering. (7) To waken the aesthetic feeling without allowing it to become perverted or exaggerated. (8) To neutralize the baneful influence of intellectual studies and the sedentary position maintained in study hours upon the general organism.

While the words of Director Sluys in reference to the "method" are so explicit as to lead to their quotation here, thus anticipating the fuller reference to his valuable report, which will follow in due course in the later pages of this paper, it nevertheless remains that the most direct statement concerning the Slöjd "method" and purpose is given in a "Leaflet" (No. 36), reprinted by the New York Industrial Education Association, from the publications of the English Slöjd Institute, which, in answer to the question, "What is Slöjd?" says:

> Slöjd is a carefully graded system of manual training. Many different kinds of educational hand-work have been tried in Sweden; but the kind which has proved far the most successful, and is now universally practiced throughout Scandinavia, is Wood-Slöjd, or Educational Carpentering.
>
> Slöjd aims at the following results: (1) To implant respect and love for work in general. (2) To implant respect and love even for the coaser kinds of honest manual work. (3) To develop activity. (4) To foster order, accuracy, cleanliness and neatness. (5) To encourage attention, industry and perseverance. (6) To develop the physical powers. (7) To train the eye and sense of form.

It proceeds to state that Slöjd is the A B C of *technical* education: that it fits for *practical* life; that it tells with advantage on the ordinary school subjects; fosters home life; develops *the physique;* develops the *mental powers;* has a marked influence on *character.* Under each of these heads a few confirmatory sentences are given. It will be noticed that no claim is here made that this method in any way tends to develop or train the æsthetic nature of the child. Indeed, it is evident that, at the beginning, any tendency towards beauty had to be sedulously avoided, because the Swedish peasant parents thought it useless. It was not till the children brought home such simple wooden utensils as they could see the utility of, that they gave consent to the new teaching. This fact lets in a flood of light upon the situation.

The report of Superintendent Kjennerud, before referred to as given by Professor Ordway, recites numbers of experiments in various kinds of Slöjd work in schools, and states incidentally that Director Salomon had then 216 models in his course in joiner work.

In Norway, at Fredrikshald, the superintendent states they have reduced the list to 32 numbers. This closely corresponds with the modification made by Miss Chapman in the English school at Bedford, already mentioned.

It is evident, then, that this "method" as now existing at Nääs was, at the first, largely empirical and tentative; that its present development is almost wholly due to the genius and ability of Director Salomon, and that it is a method still open to discussion and to modifications. In a recent statement by Miss E. P. Hughes, Principal of the Cambridge (England) Training College (reprinted in Educational Leaflet, No. 26, January 5, 1889), which is a summary of the economic advantage of the Nääs system, as claimed by its founder; the claim is advanced that—

> (*d*) It tends to develop the æsthetic sense. There are two kinds of models made at Nääs; first, such as can be made by exact measurement, use of a ruler and a pair of compasses, and secondly, those which contain curves. The second kind have the same educational effect as modelling in clay, with the additional advantage of requiring greater care. The teachers at Nääs distinguish between beauty of form *in* an object, and beauty of form *on* an object—i. e., in the way of decoration. They urge it is very desirable to cultivate, first an appreciation of beauty of form *in* an object, and hence in carpentering every care is taken to make the outline of the objects beautiful, but no decoration, such as carving, is allowed until the pupils have worked for a considerable time.

The assertion that the making of any of these models can be *superior*, as a means of æsthetic education, to modelling in clay, will, I think, seriously be questioned. Nor are the models in themselves at all calculated to charm by their intrinsic beauty of form; the avoidance of excess of ornament is, in itself, admirable, but it does not appear that the Swedish Slöjd occupations can, in any way, compete, as a means of cultivating in the child taste and the perception of beauty, with the Industrial Art Drawing introduced by Walter Smith. That the two may be combined, or rather may be taught contemporaneously, is indeed possible, and if Slöjd is to be adopted, as its advocates hope, as a step in the instruction of our public schools, it is to be hoped that it will be so modified and combined with instruction in drawing as to secure to the children the advantages of æsthetic instruction which were afforded by the Smith system of Industrial Art Drawing.

It is very evident from the accounts given by the writers on the Slöjd movement that their enthusiasm has been awakened by the remarkable personality of the director of the school and by the charming surroundings of the place.

The benevolent merchant Herr Abrahamson, whose wealth and generosity have given to Director Salomon his opportunity, and the enthusiastic Teacher himself, seen in the midst of their beautiful surroundings, form a most attractive picture. In reading the pages written by the pupils of this remarkable man I have been constantly reminded of the personal influence of the lamented Walter Smith, whose very presence was an inspiration to his pupils, and who was gifted with a rare power of influencing any audience.

Dr. Otto Salomon seems, indeed, a born teacher. The story of Nääs and somewhat of the details of the methods there followed will now be given.

In 1883 Messeiurs A. Sluys and H. Van Kalken were sent by the then Minister of Education of Belgium, M. P. Van Humbéeck, on a tour of inspection of the methods of teaching manual training in the primary schools of Sweden.

Owing to the abolition of the office of Minister of Education, effected by the clerical members of the Chamber, the report made by M. Sluys was not published by the Government. It was subsequently privately published, and has, with the author's permission, been translated and issued in their series of "Monographs" by the New York Industrial Education Association.* This work gives a concise statement of the movement for the introduction of Industrial Training in many of the countries on the continent of Europe. From his special account of the schools founded by M. Abrahamson, the following descriptive extracts are taken:

THE SCHOOLS OF NÄÄS.

Nääs is an ancient courtland, situated in the district of Elfsborg, near the line of railway which connects Gothenburg with Stockholm, and fifty kilometres from the former place. The castle stands upon the crown of a headland which juts out into Lake Säfvelängen. It has no particular architectural style, but is admirably situated in a most picturesque region, upon a height which commands a vast horizon, the details of which are defined by a pure and limpid atmosphere. The lake, in its somewhat capricious circuit is bordered by granite rocks forming the base of a plateau, partially covered with dark forests of oak and birch trees, alternating with fresh pastures where herds of cattle dot the green turf. Here and there may be seen through the foliage pretty farms and isolated villas, with an air of simplicity and comfort quite unusual. Leaving the highway from Gothenburg to Stockholm, we reach the castle by a beautiful avenue. We then climb a series of terraces ornamented with balustrades, antique vases, groups of old pine-trees, and parterres gay with the choicest flowers. On the right extends a park where nature and art seem to have rivalled each other to produce effects both grand and beautiful. Then, from occasional points of view the lake presents an indefinable charm in its ever changing aspect; now with the sunshine sparkling upon its limpid waters and bringing out every detail of the picturesque banks; and again when the silvery moonlight renders still more mysterious the vague outlines of the rocks and trees, making them seem fantastic silhouettes engraved on the horizon. But what at Nääs is most worthy of admiration is not the castle filled with noble works of art, where we were received as friends and treated with charming hospitality; nor yet those beauties of nature which recall to mind those of the Belgic forest of Ardennes. That which appeals directly to the heart is the number of philanthropic enterprises which have been built up by the proprietor of this domain.

THE BENEVOLENT ENTERPRISES UNDERTAKEN BY M. ABRAHAMSON.

M. August Abrahamson is, indeed, one of those rare men whose constant endeavor it is to ameliorate, both morally and substantially, the condition of the common people. He has shown in many practical ways how a man may efficiently benefit his country and humanity when he has at the same time large means and a soul penetrated with a desire for progress. He began, when he had acquired the manor of Nääs, fifteen years ago, by having the cottages of the peasants rebuilt, and introducing into the neighborhood the most desirable systems of cultivation and improvement. He founded three free schools which he endowed with the sum of 315,000 francs. His aim was not merely to afford primary instruction to girls and boys, living in the locality, but also to propagate at home and abroad the idea of manual training, as preconceived by its greatest teachers. The primary school for boys was opened in 1872. It is attended by children from ten to fourteen who have already gone through a lower grade.† Twenty-two hours a week are given to the following branches of instruc tion: Swedish language, history, geography, natural science, writing, drawing, singing, gymnastics, military drill and horticulture. Besides these the pupils work two hours a day in the shop. The manual work does not tend specially towards preparation for any trade. There is no idea of apprenticeship connected with the course, which is purely pedagogical. The work is regarded as an educating process, equal in its importance to any other branch which is taught. It is the principal who teaches it. By a regular system in the use of tools, the construction of a hundred objects forms a progressive series, by means of which the pupil acquires skill and general readiness, which renders him fitted to undertake later, on leaving school, the apprenticeship to any trade whatever, and to perform, with no outside assistance, every practical kind of work which the experience of life may bring to him. Moreover this instruction implies active physical exercise, which, with gymnastics, properly so-called, contributes to establish that physical equilibrium which is always more or less disturbed by studies purely intellectual. In short, it inspires in the pupils a love of work, and develops the faculties of observation and intuition.

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* "Manual Training in Elementary Schools for Boys," by A. Sluys, Director of the Normal School, Brussels, Belgium. In two Parts. Part I, pp. 37. Part II, pp. 86. These are numbers 1 and 2, Vol. II, of the Monographs of The Industrial Education Association, New York, January and March, 1889.

† Primary instruction has been obligatory in Sweden since 1842; it is given in two grades of schools, the elementary for children from six to ten years, and the primary for those from ten to fourteen.

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M. Abrahamson, in 1874, founded a primary school for girls. Its object was to provide for girls from ten to sixteen years at the same time with the ordinary instruction the required degree of skill in all feminine occupations, such as spinning, weaving, hand and machine sewing, the ordering of the household affairs; the preparation of food, etc.; in a word, the pupils are fitted for all sorts of occupations which will be of constant use to the mother of a family. This year (1884) there was introduced into this school a course of wood-work, occupying two and a half hours per week. The school year is ten and a half months, and there are eight hours of study and of work each day. The pupils are separated into two departments; in the upper class 24 hours a week are given to the ordinary studies, and ten to manual training. In the lower class fifteen hours are given to the domestic work, and twenty-one to theoretical lessons. This school is now established in a pretty villa near the lake, a kilometre from the castle, from which one sees its gay front.

THE SLÖJD NORMAL TRAINING SCHOOL.

The normal school for manual training, Slöjdlärareseminarium,* is a unique institution. A complete study of its history and organization, the application of its principles, its methods and its programme, will be, we think, rich in suggestions of all kinds bearing upon the important question of primary schools for manual training.

We will begin by giving a rapid exposition of this remarkable school, reserving for more thorough treatment in another chapter its pedagogical system. This normal school was established in June, 1875, and five years later, because of its increased numbers, was located in the building which it now occupies. It is an elegant structure of wood, in the Scandinavian style of architecture, the principal features of the façade being a flight of stone steps overshadowed by a sloping roof which covers the main entrance. On each side of the door are three windows of carved wood with casements of wood in the bark, the whole being crowned by a jutting gable; the two wings being of equal dimensions and extending several metres upon the line of the middle story. The ground-floor consists of two workshops, at the right, one containing 19 tables, and the other 12; a turning lathe, a grindstone, and joiner's tools, as well as those used for turning and carving in wood, being hung upon the wall with orderly arrangement.

THE CLASS ROOMS.

There are two class-rooms, in which ordinary primary instruction is given; the teachers who follow the course of Slöjd, meet there to listen to pedagogical lectures given by M. Salomon and to discuss questions which pertain to the subject of primary manual training.

The desks of the class occupy a portion of the space, and can be gradually raised or lowered to suit the height of the pupil. We take pains to point out this particular feature, which appears to be a most ingenious solution of the question of school desks. Beautiful geographical charts, colored prints of plants and animal — the Deyrolles collection — adorn the walls. A collection of minerals and precious stones is enclosed in a glass case, together with geometrical forms and other specimens which suggest object teaching, and on the wall facing the pupils are engravings of the kings of Sweden and some noted teachers. In short, the aspect of the class-rooms is cheerful, the laws of health having been scrupulously observed in their construction, and the entire school properties showing that the instruction there given is on the plan of the highest conception of a modern public school.

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* Literally, Training-College for Teachers-Slöjd.

THE WORKSHOP AND THE MUSEUM.

The classes pass to the workshop through a large corridor where the pupils meet at certain hours for singing-lessons, accompanied by the organ. The two wings are separated by a grand hall — the museum — which contains models for technical work and a numerous collection of every kind of toys, furniture, tools, etc., which have served as models during the experimental period. The Nääs method is not the product of pure theory; it is the fruit of long and serious practical study, and of research to which such men as M. Salomon, and his colleague M. Johnson, in order to attain a practical formulation of the Slöjd system, have given years of investigation, with a rare perseverance which has at last been crowned with success. The upper part of the school is furnished with well arranged dormitories; a beautiful reading-room, where the instructors find the different journals and books treating of the subject of industrial education; apartments for the professors, and rooms for the servants. On one side of the principal building is the storehouse for wood, and in front of it the home of the director.

PUPILS FROM VARIOUS COUNTRIES.

Around the school-house are flag-staffs, from which float the flags of the countries representod by the students pursuing the normal training. During our sojourn at Nääs, the flags of Sweden, Finland and Belgium reminded us that teachers from these three countries were brought together here for mutual study of a question of the highest importance as affecting the future moral, intellectual and material welfare of the people. During the first five years, from 1875 to 1880, the normal school of Nääs had for its objects the instruction and full preparation of men capable of giving instruction in schools of technical character, whether these were independent or annexed to primary schools.

Observe what were the qualifications for admission. Students were required to have reached the age of 18 years at least; to have sufficient physical strength to perform the duties for which the course provides; to have already had some practice in manual training; to be acquainted with all the subjects that are insisted on in Sweden at a final examination in the primary schools.

THE FORMER COURSES OF INSTRUCTION.

The instruction comprehended two courses — one theoretical or general, and the other practical. The former included Arithmetic, Geometry, Physics, Mechanics, Linear Drawing, Pedagogy and Methods; the other comprised the practice of trades, the execution of such work as teaches the use of different tools, as those of the carpenter, the turner, the wood-carver, and the smith; familiarity with the use of tools; the making and the mending of the simple instruments and utensils required in the establishment; the making of carriages and wheels for common carts; working with the larger edged tools and with the file.

The course covered one year, occupying fifty-four hours per week, of which thirty-six were given to manual work and eighteen to scientific studies. Those who followed this course were exercised in special instruction in manual training, by giving daily lessons to the pupils of the primary school constituting the practice school. The final examination included three tests — one in theoretical studies, one practical test in linear drawing and the work of the shop, and one didactic examination in the school of practice. A diploma was given to such candidates as acquitted themselves with success.

THE COURSES AS CHANGED IN 1880.

In 1880 this system was modified, the theoretical course suppressed, and the entire instruction concentrated in the exclusive study of manual work. Since that period the school no longer consists of teachers merely; but exception is made in favor of those with diplomas, who wish the practical knowledge required for teaching the Slöjd in the schools where they are employed.

This change is because of the purely pedagogical character of the Nääs method. The manual work not being considered a direct preparation for fixed trades, but as an educational means, forms no special part of the course, and the instructor teaches it to his pupils when instructing them in drawing, writing, ciphering, and so on.

PEDAGOGICAL VIEWS HELD BY M. SALOMON.

Mr. Otto Salomon thinks that the special mission of the primary school is the formative cultivation of the faculties; that the different branches of education must be considered as a proper means to attain this end, and that no one can claim to be special. All are to be gathered in one harmonious whole, and the fundamental condition essential to this result consists in charging a single instructor with the teaching of the entire course to the pupils of the same class. According to this conception, there can be no question of applying to the primary school the principle of the division of work, since in spite of the apparent diversity of the subjects taught, the system forms, as a whole, an indivisible unit. The system of employing special professors is inconsistent with the object of primary teaching.

THE COURSES FREE FOR SWEEDISH TEACHERS.

The consequence of this system is the necessity of preparing teachers for the manual instruction. This is the role assigned to the normal school at Nääs. It is open to all instructors who desire to introduce industrial education into their schools. Both the course and the lodgings are free. Teachers take their meals at a restaurant adjoining the school, at a cost of a little over a franc a day. Generally the Swedish teachers who pursue the course receive for their traveling expenses subsidies from economic societies, which are associations formed for the promotion of every kind of work having for its object the moral and material welfare of the people.

RAPID DEVELOPMENT OF SLÖJD WORK IN SCHOOLS OF SWEEDEN.

For several years the subject which occupies our attention has made considerable progress in Sweden, which has at present (1885) nearly 700 schools where the Slöjd is taught. There are not in all of them teachers who give the full course, their necessary preparation having been defective; but the general tendency is toward that result. Although the official programmes of the normal and the primary schools do not definitely prescribe manual instruction, the Swedish government is interested in the subject, and there are many teachers of that nationality who voluntarily put themselves in a way to introduce it into their schools. Since 1878 many teachers have been initiated in the Nääs method. The temporary normal course lasts six weeks; and the review which takes place the following year covers five weeks. In general these two courses suffice for the preparation of teachers in the construction of the hundred models of the series, if they continue the tool practice during the year which intervenes between the two. As in Sweden the vacations do not occur at the same time in all the schools, they have provided at Nääs for a number of temporary or partial courses each year.

In an historical chapter M. Sluys traces the growth of the idea of manual training in Education from the "manifesto" on the training of all boys and girls, issued to the cities and people of Germany by Dr. Martin Luther in 1524; he then cites Coménius, in his great work on Education, early in the Seventeenth Century. Then the great English educator, Locke, followed by the Frenchman, Rousseau in "Emile;" by Basedow, in Germany in 1774, and by Salzman, the same year, in founding the Institute at Schnepfenthal; by Blasche, who two years later was put in charge of the technical training given in this Institute, and then by Pestalozzi.

All of these educational authorities realized and urged the importance of Manual Training simultaneously with Intellectual Training; want of space prevents fuller citation from these interesting pages of the account of the beginnings of this movement. His statements concerning Fröbel, and the account of the efforts of Cygnaeus, of Finland, are so closely related to the topics comprised in this Appendix that they are here quoted in full:

FRÖBEL AND KINDERGARTEN METHODS.

To Fröbel belongs the distinguished honor of having established the true principles of the education of children, and of having conceived a method suited to their nature. If many of his ideas do not defy criticism, there is one which will suffice to insure for him, an ever-increasing renown in proportion as it becomes better understood. It is that principle of action which combines "to know" with "to do" in that methodical, progressive, intelligent activity based upon the spontaneous energy of the individual. Gifts and occupations provide their own peculiar means for developing the human being harmoniously in the domain of art, science and industry. The occupations of the kindergarten tend to increase general technical aptitude. They not only develop manual dexterity, but they also appeal to the intelligence and to the heart, and are conducted on æsthetic principles. Fröbel, in "The Education of Man," says on this point: "The pupil is to train himself to external and material manifestations, according to rule and law; that is to say, going always from particular laws to general laws. It is here that are to take place the manifestations produced by more or less substance, the constructions, the work in paper, in card-board, in wood, or clay modeling." And again: "Pupils of this age should be gradually taught domestic affairs, and the different trades of the workshops, or of agriculture; they may be guided in this by a judicious father who is intelligent and apt at these kinds of work. Later on, they will be led by their parents or teachers to produce alone, no matter what, following out their own idea—and to construct also by themselves, some little objects for which they will thus gain experience and a necessary kind of routine. It is important to reserve for a young boy at least an hour or two a day, that he may apply himself to some serious manual work having a definite object. This will prepare him for the important life-work, and it is one of the greatest evils that we have to complain of in our public schools, that they prevent the pupil from taking any share in domestic affairs, and from all participation in external productions. It will be said, on the other hand, perhaps, that the pupil of that age, if he would acquire a certain degree of knowledge, should devote to this end all his time and faculties. That this is an error is plainly proved by experience; for manual training not only fortifies the body, but exerts a salutary effect upon the mind; an influence so happy, that when the pupil is invigorated, if we may so express it, by a bath of manual labor, he finds himself more fresh and vigorous for intellectual work."

The principles of Fröbel are not merely adapted to elementary schools and kindergartens, they should penetrate the primary schools, and even general education. We are still far from a method entirely based on the Fröbel theory; that will be the work of the future. But we see the breaking forth of the dawn of this transformation of the primary school in many places.

In France and Belgium, they have adopted some of the exercises of the Fröbel method in the recent programmes of their primary instruction. It is true they are mutilated, thereby losing much of their value, because they belong to an organized whole, of which each part is intimately connected with the others.

Uno Cygnaeus of Finland.

In Finland, Fröbel found one apostle who was convinced of the truth of his ideas. In 1858, the Finlander Uno Cygnaeus was entrusted by the government of his country, with a mission of pedagogical study throughout the countries of Europe. Fröbel's ideas, especially those in regard to manual training, exerted a deep influence upon his mind, and he resolved to introduce manual training into all the schools of his country. In the *Rheinnische Blätter* für *Erzeihung und Unterricht*, 1882, Heft III, there is an open letter by Cygnaeus to Dr. Wichard Lange, in which we learn that the study of Fröbel's writings convinced him of the necessity of introducing manual training into primary instruction. He chose work calculated to awaken æsthetic feeling, to develop manual dexterity and to impart general skill. He included carpentering, the turning-lathe, work in iron, and basket making. He does not consider any of these as a preparation for any trade; they are only means for a general development.

Cygnaeus tells us, that he everywhere met opposition, especially in Sweden and Denmark, when he desired to introduce manual training into the schools. The old schoolmasters shrugged their shoulders and declared that it was an effort to revive the futilities and childishness of the Basedow system. Only the partisans of Fröbel showed themselves favorable to the proposed reform. In a proposition addressed to the Senate of Finland, Cygnaeus insisted upon the necessity of introducing manual training into the normal schools, and his wish was gratified. From that time, manual education has been widely diffused throughout that country. In 1870, the question was seriously agitated in Sweden, Norway and Denmark.

In one of his writings, Cygnaeus makes the remark, not without bitterness, that these countries seemed to ignore the initiative which was taken by himself in Finland. Nevertheless, we cannot help saying that this assertion appears to be exaggerated. From the lips of M. Salomon we have learned what admiration and high esteem he felt for the persevering efforts of Uno Cygnaeus. In his work, "*Handfertigkeit und Volkschule*," he says: It is to Finland, that the honor belongs of having recognized before all other countries, the pedagogical value of manual training, and of having put the idea in practice in its public schools; and it is to M. Uno Cygnaeus, that Finland owes this benefit.* The efforts of Uno Cygnaeus bore bountiful fruit in his own country. The law of 1866 made manual work obligatory in all primary and normal schools. It is the regular instructor who teaches it. The teacher-pupils are exercised in carpenter's work, wood-carving, basket-making, work in iron, and at the forge.

Although it is undeniable that Cygnaeus has exerted an influence in Sweden, it is none the less true that in that country manual training developed spontaneously.

An interesting description of the situation in Sweden follows. The rapidity of the growth of this form of school training is shown by the statement that while in 1876 there were only 87 schools which adopted the Slöjd, in 1884 there were 700. To the sculptor, Charles Ahlborn, who, for several years, travelled over the country, urging by public lectures the adoption of Slöjd in schools; to Count Erick Sparre, as well as to M. Abrahamson, and M. Otto Salomon, whose schools he has particularly described, credit is given for this remarkable and peaceful development. The closing paragraph of this chapter, which here follows, evinces clearly that it is the pedagogic quality of this training which gives its value in the judgment of M. Sluys.

THE PEDAGOGIC VALUE OF SLÖJD.

In the beginning the economic conception was generally adopted. Everywhere manual training was looked upon as a means of preparing the children of the common people to earn their living. But gradually the question took on its true aspect. It was recognized that manual training has a more elevated purpose, and one indeed more useful, in the deeper meaning of the term. It came to be considered as an educational process for the complete moral, physical and intellectual development of the child. Thus was realized in Sweden the dreams of those illustrious teachers, Comenius, Rosseau, Pestalozzi and Fröbel, in seeing combined in the primary school programme, manual training and the teaching of purely theoretical subjects, so as to ensure the integral cultivation of all the faculties and all the aptitudes which make up the complete man.

In the Second Part of M. Sluy's report, the methods followed in the schools of Nääs are described, and a resumé of the lectures given by M. Salomon to his pupils, is wrought into the text; though the parts separately due to the teacher, or the writer, are not at all clearly indicated.

The opening passage of Part II. has already been quoted. See *ante*, pages 865–6.

Several pages on "the necessity and aim of Manual Training in the Primary Schools" follow. Then comes a chapter in "the choice of Manual occupations," for use in the schools; several quotations from Rosseau's Emile precede a statement about the stupefying effect on the worker of the modern economical division of work. However necessary this division of labor may be in effecting cheap production, it is clearly unfit for developing the faculties and deftness of the child; the occupations for the training of children must then be such as the child can perform by himself.

This matter of selecting occupations for school work is further considered as follows:

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* Finland has already sent to Nääs, some students to be instructed in manual training after the method of M. Otto Salomon.

THE SELECTION OF SCHOOL OCCUPATIONS CONSIDERED.

It is sufficient to point briefly to the necessity of giving to children only such occupations as are in proportion to their physical strength. If they demand too violent or fatiguing effort, they debilitate and exhaust them; but if they are too easy and excite no sustained attention, or do not present ever increasing difficulties of execution, they do not exercise the faculties sufficiently, do not promote bodily health, and will not form habits of persevering effort.

On the other hand, the exercises should consist of an *inductive series*, gradually increasing in difficulty of execution, exciting energy demanding more and more attention, so that each effort may be a little more difficult than that which preceded it, and so prepare for the work which is to follow. This is the necessary condition for cultivating emulation, zeal and perseverance, and insuring constant progress on the part of the pupil.

USEFUL HOUSEHOLD OBJECTS ONLY TO BE MADE.

The nature of the objects to be manufactured by the children is also important. It touches considerations of a high order, which at first sight do not appear, and in connection with which we are about to make some suggestions. At Nääs, every work of luxury, of pure fancy, or for mere ornament, is prohibited: the method only includes the construction of useful objects which can be employed in the families of the children attending the school.

Their nature is determined by the social position of the parents of the pupils; they belong generally to the farming or working class, as do the great majority of those in other places who go to the public schools. Such an object, while useful in the home of a rich citizen, would be out of place in the humble lodging of a workman or peasant. For these last everything was a luxury which has no direct value in the housekeeping. But we have in view the education of the children of the most numerous social class, that which lives by manual labor. It is in the highest degree important not to cultivate in them a taste for frivolities and useless things. The time they spend at school is too short, the practical necessities of life too imperious, for us to rationally think of teaching them to construct objects of mere ornament. Besides, this question has a moral aspect which should engage our attention. Experience proves that children who have been altogether taught construction of objects of luxury feel afterwards a strong dislike for making useful and indispensable ones. Hence young girls who have begun with embroidery and work of that description, will be more disinclined to engage in the housekeeping cares, mending of garments, making of shirts and everything which they consider unworthy their attention. In the same way most boys after being assigned to the making of objects of ornament, such as boxes, frames, and other things of questionable choice, cut from wood and card-board, show a disdain for more serious work. There are formed in their minds, unconsciously, false notions concerning the object and the dignity of work; they come to look upon heavier tasks as unworthy of their efforts and distinct from what they consider noble work, whereas it is desirable to penetrate their minds at the earliest possible period with this profound moral principle, that all useful work confers honor upon those who do it. We insist upon the importance of this principle, because in highly civilized countries many children of workmen and peasants show a strong tendency to despise manual labor, aspire to abandon the condition of their parents and to embrace professions that they consider much superior, such as clerkships in mercantile houses or public offices.

THE CHILDREN THEREBY LED TO FOLLOW THE OCCUPATION IN LIFE OF THEIR PARENTS.

In organizing manual training in a school for the people, and in excluding from it wholly such occupations as have no other object but luxury or ornament, we shall inspire the children with a respect and liking for the useful occupations followed by their parents. We think that the principle laid down in the above should also be applied to schools frequented by those in easy circumstances. They have already too much inclination in these modern times to occupy their attention with futile objects, and to attach to them a merit that they by no means deserve. In having them perform useful work we may counteract, in a certain degree the bad effects of an ill-directed home-education. We are asked if it is not proper to teach children to make toys. This kind of work has been condemned at Nääs for many reasons. First, the instruction given in Slöjd is to children from ten to fifteen, sons of peasants or working-men; they have a life before them for which they must be prepared; the making of things so trivial and transient as toys is not consistent with such an object. Then, too, toys at this age only give a brief satisfaction. Children find no more pleasure in making them than in the useful articles to be given to their parents, and which serve useful purposes in their homes. Parents do not value the toys, while they do prize the useful articles. When the child brings from school an object of this kind, they show satisfaction and congratulate and encourage the little worker. The object is at once utilized, and they make use of it with pleasure that is ever new. The toy falls short of that general satisfaction which is to the child a lively stimulant. At first, in the Nääs school, they did cause the children to construct mere objects of ornament, and toys; but the parents showed themselves quite averse to this kind of work; they said it was to their children a loss of precious time; it became necessary to pay them fifty-six centimes a day to engage them to send their children to Slöjd. After this experience, objects having no practical utility were entirely suppressed, and from that time the parents have taken pleasure in seeing their children pursuing the course of manual training.

At the Teachers' Convention held at Upsal in 1883, this subject was under discussion, and the views of M. Salomon, concerning the nature of objects in the course of the Slöjd was almost unanimously approved. Hence we may affirm that the Slöjd is thus deeply rooted in Swedish soil because of its utilitarian character, and has been for this reason commended to the mass of people; while its principles are in strict conformity with those of a serious education. Here, then, Rousseau was right; "I wish above all that Emile should learn a trade. A reputable trade at least, do you say? What does the word mean? Is not every trade that is useful to the public, respectable? I do not wish him to be an embroiderer, a gilder or varnisher like the gentlemen of Locke, I prefer that he should build highways rather than make flowers on porcelain. So returning to the first expression, let us choose a respectable trade, but let us ever remember that there is no respectability without utility." *

It will be noted that the avowed object of this Manual Training Education in Sweden, as stated in the preceding paragraphs, is to retain the children of Peasants in the peasant class! However valid such an educational purpose may be in a kingdom of Europe, it is not to be tolerated in the school training of children in the American Republic.

In manual work the construction of objects should tend to develop the æsthetic feeling by their pure forms. This theory is not in contradiction to those which prohibit objects of mere ornament or luxury. Useful household objects are capable of a certain degree of good taste when constructed exactly, correctly, and with neatness. It is not in superfluous ornament that we find true beauty. It has been said with reason that "the beautiful is the splendor of the true." Ornamentation in excess shows the decadence of art. One may safely assert this in regard to many modern conceptions, artistic so called, such as monuments, marbles, etc. We must guard against this carefully in primary education in general, and particularly in manual training. True beauty consists in that harmony and symmetry, which provides that everything be perfectly adapted to its use, that it occupy exactly the necessary space, so that there be none too much or too little, all parts being balanced and sustained by unity. Every useful object, however common it may be, may illustrate by its structure, either vulgarity or good taste. So in the composition of a series of models, we should consider first of all their utility from the point of view of the social condition of the pupil, but give to them always the most elegant form possible. In this way the Slöjd may have a truly educating influence. Not only will it develop the skill of the hand, but the exactness of the eye, and it will gratify the sense of the beautiful while it will prevent it from misleading, corrupting, or predominating too exclusively.

Such are the principles which have guided M. Otto Salomon in the choice of trades to be introduced into the primary school. We make a complete review of them when we say that the manual occupations of the primary school are to answer the following conditions:

First.—To exercise as completely as possible manual skill.
Second.—To fix the attention and awaken the intelligence.
Third.—To give habits of order, exactness and neatness.
Fourth.—To limit the construction of objects to those of general utility.
Fifth.—To develop the æsthetic feeling without exaggerating or perverting it.

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* Rosseau, Emile, Book III.

Sixth.—To undertake the construction of complete objects, to be finished without division of labor.

Seventh.—The work to be in proportion to the physical strength of the children.

Eighth.—To be wholesome, to develop general strength and to be carried on as far as possible in the standing position.

Ninth.—To present a progressive series, that is, graduated according to the difficulties of execution.

In schools of primary manual work, the choice of the means has generally been limited to the following:

Work in iron at the forge—locksmithing.
In straw and rushes—basket-making.
In paper, card-board—book-binding.
In wood-turning, carving, carpentering and coopers' work.

Each of these forms of work are considered in turn, and the conclusion is reached that "work in wood," Slöjd, meets more of the requisites than any other. * * * .

THE WOOD SLÖJD TAUGHT AT NÄÄS.

It is to this conclusion that they have come at Nääs:

The Slöjd there includes the making of a hundred objects of wood. It is not joiner's work, properly speaking; it is a combination of carpenterings, cooperage, turning and carving. There are 46 tools.* They comprise the usual joiner's tools, besides the knife, the *wabstrinque*, a curved knife, which is used to carve spoons; the chisels and gouges of a turner, and the turning lathe. The knife, which is unknown to joiner's work properly so-called, is very much used in the Slöjd. The Swedish peasants use it to carve a multitude of objects in wood and their children are long accustomed to the use of this instrument, before entering school. They profit by this preliminary acquisition, as the knife is often used in the manufacture of the objects in the series. Carving and turner's work, however, occupy but a limited place in this method; they do not answer the requisite conditions. Carving is done in a sitting position, and exacts slight movement of the hand. The time is, moreover, too short to give any number of special exercises in carving. Yet there is a sufficient quantity of it done to give to a few objects a certain artistic value by a very simple ornamentation. The turner's work is always difficult and not without danger; besides it calls for a one-sided effort; we cannot therefore give to it a prominent place in school-work. In a word, wood-work, without carving or turning, is sufficient, to attain the general result sought. Taken together, the exercises of the Slöjd give opportunity for the handling of all the tools employed in wood-work, and for all the necessary manipulations peculiar to work of this class. When they have executed the hundred models, we may say that the pedagogical object of the work is attained; they have acquired the general manual dexterity which finds such frequent application in practical life, and whatever manual occupation they may choose, their apprenticeship in it will be more rapid and they are prepared for the successful practice of many trades. The objects made by the pupils are neither polished nor colored. Experience proves that children from 10 to 15 years of age do not generally succeed well in applying color or polish to wood. Another more important reason militates in favor of prohibiting this. The child has a natural propensity to conceal the defects of his work, and he may succeed by the application of this paint or polish in giving a presentable outside appearance to an object whose merit is doubtful. He thus acquires the habit of not doing his work conscientiously, and of attaching more importance to what appears than to what is. If the objects are to be wrought in wood without the intervention of special means to give them a deceptive appearance, he will give his whole attention to the details and strive to render them perfect. He will also see all the defects of his work and gradually correct them. Besides, it is not true that an object is more beautiful for being painted or polished; it should be beautiful through its form and because of correct execution. It has been urged that polish tends to keep the household article clean; for this very reason it is advisable to dispense with it, thereby habituating the children to keep the objects which they construct in the greatest possible degree of cleanliness. Pupils can use in their work but a limited quantity of raw material. It is a principle of economy that they should learn to use it in the workshop, and this habit should be formed at an early age. This raw material is exclusively wood, because it has been shown that work of this sort is most available for the purpose;

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* For this list see seq. pages 891-2.

also because it is an ordinary material, easy to obtain, and in short, because in general education, it is well, as far as is consistent, to limit expenditures, to render simple and maintain the unity of the material. In the series of a hundred models at Nääs, a few objects only required the use of any other material, such as nails, tacks and hinges, but even these are used in carpentry.

The pupils learn the use of the different kinds of wood, hard and soft. They are inclined to think at first that soft wood yields more readily to the action of tools; but practice proves that in many cases it is easier to work in hard wood. The uses to which objects are devoted render hard wood necessary; for others soft wood is required. The use of different kinds of wood permits of gradation in the difficulty of the work.

VARIETY OF OBJECTS GIVEN TO SECURE CONTINUOUS INTEREST OF THE CHILDREN.

The greater number of objects have their reason for being in the necessity of sustaining the interest of the child in the work. We have already said this many times, and we do not hesitate to repeat how important the principle is. The child who has to construct a number of experimental objects, whatever they may be, becomes wearied, works without enthusiasm, makes no progress. One observes in the Nääs series, objects of the same kind; many spoons, many boxes, many boot-jacks, many plain rulers; but they do not follow in succession, and they are made to present different degrees of difficulty to the pupil without his passing directly from one to the other. We also insist upon gradation in the Slöjd. It is a general principle of pedagogy that all instruction should advance from the easy to the difficult, from the simple to the complex. This principle is strictly observed in the Nääs method. This may not be clearly obvious to those who see the models exposed in the school museum. This was our own first impression. But we copied the work, and in a few weeks we had constructed thirty of the models in their order; hence we can declare with scientific certainty, that the gradation not only really exists, but that it could scarcely be improved upon. Let us remember moreover, that this series, as we have already said, is not the product of a mere theory — almost always defective when it concerns material things — but it is the fruit of long and patient experience. M. Otto Salomon and his colleague, M. Johanson, tried many hundreds of models before fixing upon this series. The gradation is accomplished now by the use of a new tool, again, by another style of manipulating a tool that has already been used, caused either by the nature of the wood, as to its being soft or hard, or by giving the objects a larger size, or by different grouping, or by use of the turning-lathe or carver's tools. The pupil who has executed the first twenty-five numbers would not be prepared to undertake at once the fiftieth in the course, the intermediate work being strictly necessary. There is no break found in it.

ADVANTAGES OF A PROPERLY GRADED SERIES OF LESSONS.

The child who goes through the course regularly, never finds himself in the presence of an insurmountable difficulty. He begins without hesitancy, for the first efforts are designed to be simple and easy. From the first lesson of the Slöjd, he sees his efforts end with a good result, which encourages him and stimulates his zeal. He aspires continually to execute the most difficult models, and he is, from day to day, more convinced of his ability to do it. In the description that we have given of a lesson in Slöjd, we have minimized the part of the instructor. We start from the principle that the child's development should proceed by his own spontaneous effort, so that he may learn to make use of his powers, and to conquer alone the difficulties and problems which present themselves. It is the application in teaching of the principle of self-help that makes men original and energetic. The teacher will not reach this result by simply imparting his own knowledge to his pupils, by aiding them directly in their efforts, by undertaking himself the more difficult parts of the model, or by giving the final touch to a pupil's work. In the Nääs system the child begins and completes his work unaided, and he can do this because of the perfect gradation. The instructor shows how the tool should be handled in this or that case, but does not make his demonstration on the object in progress. This being furnished, he submits it to a comparison with the model, again sets forth its defects, which if possible, are at once corrected by the pupil; if they cannot be rectified, the teacher breaks the piece, it is cast aside, and the pupil begins over again. When the child has finished his model correctly, he takes it away with him; it is his work; nobody else has contributed to it; he can show it with pride, for he has applied his intelligence and activity to a useful thing which will be received with satisfaction by his parents. The modest homes of the peasants of Nääs are thus constantly enriched by the work of the children. Is it not an admirable arrangement, calculated to render a school truly popular, to introduce into the family habits of serious industry, and to inspire the children, at the same time, with respect for handiwork and love of the domestic fireside, which is the true basis of happiness and of morality.

SUGGESTIONS AS TO POSSIBLE APPLICATIONS OF DRAWING TO THIS WORK.

We must, however, mention one lack in this system. The pupils work only after wooden models; but they follow at the school a course of linear drawings; why are they not taught to apply this drawing to their manual work? True, just as it is, the Nääs Slöjd gives excellent results; we have said this before and now we repeat it. It develops, in great degree, manual dexterity, earnestness, attention and perseverance, and inspires a love of work. But it confines the pupil too strictly to the production *ne varietur* of given models. The child becomes an active, correct, careful and conscientious worker, but he has not sufficient opportunity to develop his originality; his imagination cannot take the least flight; he is encircled with an iron band. We believe that manual training would gain much as a means of education, if it were intimately connected with the teaching of design and of geometric forms. It is necessary to train the pupils to work not only after models, but also after designs.

EDUCATIONAL VALUE OF DRAWING.

The educational value of drawing is indisputable. The systematic teaching of this branch of study, trains the mind to habits of attention; teaches it how to analyze and combine forms; gives to thought a correct, clear and exact expression; makes fertile the imagination, develops the taste and limbers the hand. In its connection with manual training, design has an importance which can escape no one's observation. It leads by purifying the taste and by multiplying and embellishing forms, to the direct application of art to industry. It is the fundamental basis of all manual occupations, which have for their object the material reproduction of forms. As it is independent of conditions foreign to form, its finds its application in all the industries, whatever the raw material which they call to their aid. This is what one perceives in all the trades. The tailor draws his patterns; the carpenter works after his outlines; the sculptor begins by designing the outlines of his ornamental work, which are to be reproduced in wood, stone or metal. For all the manual arts, design is the language *par excellence;* it has a clearness, a precision and a conciseness which words cannot attain. In his work on *The Instruction of the People,* M. P. Tempels has made perfectly clear the importance of drawing in education. No one denies these principles; why then are they not applied in school workshops? They tell us that this application, so evident in theory, meets with great difficulties in practice; that children from ten to fourteen cannot draw well enough, nor sufficiently comprehend designs, to work correctly after graphic representations.

DEFECTS IN PRIMARY SCHOOL METHODS OF TEACHING DRAWING.

To what must we attribute the slight progress generally made in drawing by pupils in primary schools? To the method, and to the small amount of time given to instruction in this branch. Drawing is an art which requires a variety of exercises, and their daily application. Where pupils draw but an hour or two in a week, results cannot be satisfactory; and they are altogether useless if they do not conform to a natural and progressive method. The method of the academy is no more suited to the primary schools, than is the method of the universities suited for the instruction of children in the simple ideas of grammar, geometry, history and the natural sciences. Here, more especially, it is essential to start with the psychological principles established by Pestalozzi and Fröbel, to follow their application through the entire system of primary instruction, and to prepare a progressive series of designs from nature, without entering upon the domain, inaccessible to the minds of children, of plans, projections and scientific perspective. It is the eye and the hand that must be exercised in the exact perception and faithful reproduction of material forms, in going gradually from the simple to the complex. The child does not at first distinguish objects in their totality; the relief escapes it, and it does not see the the surfaces, but rather the limits of the surfaces. The tracing of outlines is the point of departure for a system of drawing in the primary school; contours as they are, and not as they present themselves to the eye, with the deflections due to perspective. This drawing of outlines is the natural method; watch the efforts of children left to themselves; they reproduce the outlines of the objects that they see, such as houses, furniture, animals, etc., tracing the lines that describe their limits without troubling themselves with the relief.

DIFFERENCES DEFINED BETWEEN ADVANCED AND ELEMENTARY DRAWING.

Perspective drawing is for the advanced stage of instruction, and can only be entered upon with success toward the close of primary studies. But linear drawing, applied to plans, carvings and outlines, etc., may be taught successfully to children, as well as the more simple combinations of lines furnishing the basis for ornamentation, and it is exactly this kind of drawing which should be combined with manual training. According to our ideas, the progressive order to be followed in instruction in manual training based upon design, comprehends, first, working after models and the concurrent reproduction of models by linear drawing; secondly, work after the models thus drawn; third, the construction of new forms, conceived and designed by the pupils and reproduced in substance. Our experience at Nääs has confirmed this opinion. The pupils have drawn on a scale of one-half the dimensions, plans and carvings of two objects that they were not familiar with, and which did not form part of the series. They have at once been set at work in constructing after their own designs. The results were very satisfactory."

Questions relating to the teachers, the pupils, the place, the time, and the material are then discussed at length, and the following conclusions are reached. Teachers, not workmen, must give the instruction, and the teachers must be taught in Manual Training Slöjd Schools. As a rule, the regular teacher must also teach Slöjd. It will be remembered, in this connection, that the only hope for the general introduction of Industrial Art Drawing in American schools lay in the fact that the regular teachers could easily acquire sufficient facility in elementary drawing to enable them to teach the new study.

As to the pupils, M. Salomon thinks *all* school children should be taught Manual Training, but in Sweden they began with the older pupils in the higher classes first; as a rule, pupils must be 12 years of age to take Slöjd in Swedish schools.

As to the "place," it is stated that a special room or building is needed for the Slöjd instruction.

As to the "time" the pupil should pass in this work, he says two hours a day should be given to this training.

As to the "materials," "tools, models, and the raw material, it is important to reduce their cost to a minimum. The raw material consists of nails, glue, and wood of various kinds. The wood is taken in the rough and with the bark on." The list of tools and of models, which are given in two tables, will be found at the end of this paper.

An account of Manual Training in the schools of Stockholm follows. From this the closing pages are quoted:

MANUAL TRAINING IN THE SCHOOLS OF STOCKHOLM.

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The primary schools of Stockholm are very well organized. For twenty-five years a man of high intelligence and rare energy, M. Meyerberg, the inspector-general, has spared no pains to bring them up to the highest level of modern progress. These schools are not externally remarkable for the imposing aspect of their façades; so far from appearing to be more than they are, they are more than they appear. They are generally surrounded by large grounds devoted to recreation. What particularly impressed us was the neatness, the fine bearing, and the politeness of the pupils, and the order and discipline which everywhere prevailed. The classes are provided with good geographical charts, prints of geological specimens, objects in natural science or natural history; collections of geometric forms;

weights and measures, apparatus of physics and chemistry, and all objects necessary to give the lessons according to the very best methods. Gymnastics are taught by a system very different from that of Germany, France, and Belgium. We were present at some of the lessons, and can testify that the exercises are energetic, methodical, full of entertainment and life. There would be, as we thought, a real utility in studying, on the spot, this system so little understood with us, which owes everything to science and nothing to fancy or routine. The pupils of a school are organized into companies for the practice of military drill including use of firearms. This instruction which forms habits of discipline, and prepares pupils for service in the army, has not, we are assured, inspired warlike tendencies or taste for vain parade, consequences which have been much feared elsewhere. At Stockholm many classes of boys are taught by women. It is thought that women of equal education have generally more aptitude for elementary teaching than men; on the other hand the recruiting of the ranks of female teachers is more easily done, because they can, more easily than men, live on the minimum of salary appropriated for these positions.

SLÖJD IN THE PRIMARY SCHOOLS.

All the boys in the higher classes of the primary schools pursue the course of Slöjd. It seems useless for us to relate in detail the circumstances of our visits to different schools, where all follow the same method. We shall confine ourselves to the generalities which it seems most important to make known. On the 30th December 1875, the school committee published a report addressed to the board of direction in which it advocated the principles of primary manual training. It declared that this instruction ought to be made a part of the pedagogical school course; that its object was, like the other branches, expressly to cultivate the child's powers; that it should be so organized as to train the eye and the hand, to give to the pupils habits of order and attention, to develop in them courage, energy, judgment, a spirit of observation and a sense of the beautiful.

THE ADOPTION OF THE NÄÄS METHODS.

During the first period of organization these principles were not fully understood by the persons engaged in teaching; they did not follow a systematic course, going from the easy to the difficult; the pupils worked without plan or method, and results were not satisfactory. Many trades were taught in the schools. In 1882, the board of managers authorized M. Berg, inspector of instruction in the Slöjd to visit the principal schools of the country, in order to report concerning reforms to be introduced into the system of manual training at Stockholm. On his return, M. Berg proposed to adopt the Nääs method, which he considered the best, most complete, and best adapted to the pedagogical purposes which he is anxious to accomplish. "This is the only method," says his report, "which can serve as an example for a good system according to the views of this board." The pupils of the Stockholm school are now engaged in the manufacture of objects after models of the series of Nääs. A greater part of these models remained such as they were; a few only have been modified or replaced, because while excellent for the country they are of no use in a large city. Each school is provided with tools for carpentry, turning and carving.

LESSONS IN WOOD CARVING.

In the Nicolăi school, there is a special shop for carving; and there we find pupils who, having finished the course of Slöjd, show special talent for this branch of the work. They begin with geometric forms, and when the pupils have acquired a certain degree of skill, they pass on to the antique style, and it is only after this that they make ornaments in rustic work. We were present at an interesting lesson in carving given at this school by Mlle. Nerpin, to about a dozen pupils. The manual work is independent of the drawing instruction. Inspectors Meyerberg and Berg tell us that it is essential in the higher classes to continue instruction in free-hand drawing and in linear design at the same time with instruction in manual training. We entirely agree in this opinion. It was not possible to charge the regular instructors with the Slöjd teaching, because they were unprepared. The city therefore sent instructors to follow the course at Nääs. It still employs a certain number of special teachers, but this is only a provisional arrangement. In the near future this instruction will be given exclusively by the teachers.

PEDAGOGICAL PRINCIPLES PRESENTED.

The pedagogical principles of Nääs are also rigorously put in practice at Stockholm. The pupil is proprietor of the object made by him; but if ill made, he cannot take it away; it is broken. The oversight of the training is rendered efficient by two measures which suit admirably. When an object is finished a ticket is attached to it, bearing the number of the series, the number of hours given to its construction, the name of the pupil, the exact appreciation of the teacher, stating whether it is "well done," "with great success," or "with the greatest success." When the inspector comes he examines these objects, and consults this certificate. His approbation authorizes the return of the object to the pupil. The teacher produces a register in which are inscribed the causes of absence, the progress of pupils, and the time they give to the construction of each object. These registers also show that the average age of the pupils in Slöjd is 11.8 years and that about 76 per cent. quit school after going through the complete course. In the Slöjd rooms the tools are placed in their racks in perfect condition and order; one can at once find the tool he requires, and a glance suffices to decide whether they are all in place. Compartments are arranged for placing temporarily any unfinished models, or to preserve for inspection such as may be finished. Raw material is supplied by the administration at the opening of the year, and sent into the schools.

A SLÖJD TRADE SCHOOL.

In every school of Slöjd there are four sections of twelve pupils each, classification being according to aptitude. Each section works three times a week for 2½ hours each session. Pupils who pursue the course of carving are occupied at this work five hours a week. We visited also a school of Slöjd founded by M. Winborg, manufacturer, Adolph Frederick School, in which they teach several trades; work in metal, locksmithing, carpentry, and turner's work. The children are from ten to fourteen years of age. The metal work comprises the construction in copper wire of objects such as bottle-cases, bottle-racks, key-rings, baskets, bird-cages, etc. The pupils learn also the use of the file, to bore holes, to put in rivets, and springs, to make boxes of tin, watering-pots, sleds, fire-escapes, etc. A steam-engine supplies power for the turning lathe and other machines. The pupils are intrusted, by turns, with the duties of firemen. It will be interesting to know the results of this experiment. In review, the instruction in manual training at the Stockholm schools produces excellent results. It is generally conceded that the Nääs method is superior to any other, from a pedagogical point of view; but the inspectors think it is essential to combine closely the Slöjd and the instruction in drawing.

Several "conclusions" from this report were submitted to the Belgium Department of Education.

These were, in brief, that Manual Training should be given in all primary schools—should be taught pedagogically as are all other studies, and by the regular teachers of the schools, who should be taught Slöjd in Normal Schools. The following were the closing conclusions, in which the arrangement of the Slöjd in the schools of different grades is outlined:

CONCLUSIONS.

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V. The programme of instruction in industrial training comprises

A. First grade, primary schools, pupils from six to eight years old. Occupations of the Fröbel method, three hours per week.

B. Second grade, primary school, pupils from eight to ten. The same occupations, but more especially the modelling in card-board and paper,—three hours per week.

C. Third and highest grade primary school, as well as the schools preparatory to the normal school, pupils from ten to sixteen. Work in wood after the method of M. Otto Salomon, from three to six hours per week.

D. Normal schools. Practical and theoretical training of future teachers in the course given under A, B, and C.

VI. Instruction in manual training should be closely combined with that in geometric forms, and in drawing.

VII. In order to insure good instruction in this industrial training in normal schools a temporary course should be organized. It would be useful to send some instructors to Nääs in order that they may pursue there the entire course.

Several pages, containing a record more or less brief, are given to the progress of Manual Training in primary schools for boys in the following countries: Belgium, Sweden, Finland, Norway, Denmark, Germany, Saxony, Holland, France, England, Switzerland, Austria, Spain, Russia, and Japan. This, with the tables already referred to, completes this very interesting report.

AN ENGLISH SLÖJD NORMAL SCHOOL.

In the Academy article by Principal Keep, before referred to, a concise account is given of the Slöjd school opened in Bedford, England, by Miss Evelyn Chapman, who associated with herself Miss Nyström, of Stockholm. Miss Chapman having gone to Stockholm to study Slöjd, brought back her teacher and opened, during the summer vacation of 1887, an experimental normal class in Slöjd. The following statement by Mr. Keep of the tools used and articles made is of interest. It will be noticed that the 100 models of Nääs are here reduced to 33.

SLÖJD TOOLS AND MODELS.

* * * The indispensable tool used by the sleight worker is the knife. The Swedish knife has a blade two and one-half inches long, immovably fixed in the handle, and terminating in a long, sharp point. Besides the knife each worker has a pencil, a square, a saw, an awl, perhaps a pair of dividers, and hammer and nails. For general use there are work-benches of Swedish pattern, but not much unlike those used in our best cabinet shops. Besides there are sets of bits, chisels, gouges and planes. One work-bench and one set of tools suffice for four scholars.

MODELS USED IN THE BEDFORD (ENGLAND) SCHOOL.

The following is a full list of the articles which are to be made by scholars as a result of a course of sleight training: I. Pointer. 2. Flower stick. 3. Penholder. 4. Bird's perch. 5. Flower stick, (square). 6. Key-label. 7. Slate-pencil holder. 8. Dibbler. (Pointed stick for setting out flowers). 9. Forked clothes-pins. 10. Paper knife. 11. Flower cross. 12. Ruler. 13. Knife-handle. 14. Pen-tray. 15. First spoon. 16. Hammer handle. 17. Second spoon. 18. Bracket. 19. Stocking stretcher. 20. Trencher. 21. Flower stand. 22. Butter beater. 23. Footstool. 24. Corner bracket. 25. Nail box. 26. Sugar scoop. 27. Boot-jack. 28. Shoe-brush box. 29. Stool. 30. Knife box. 31. Salt box. 32. Teapot stand. 33. Match box.

These articles are carefully arranged in the above list in the order of their difficulty, and each article is made in a manner and by steps definitely prescribed by the teacher. So simple are the first tasks, and so exact the method, that it is not possible for one who follows it to fall short of a certain standard of excellence. The wood used is at first a soft wood like white pine; afterwards a harder wood is employed. Each worker keeps in his own drawer every article made by him or her, marking each with his own name, and receiving all at the end of the course for permanent preservation.

The issue, by the New York Industrial Education Association, of the Monograph, already referred to,* giving the translation by Dr.

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*The Slöjd in the Service of the School, by Otto Salomon, PH. D., Director of the Normal School for Slöjd Instruction, Nääs, Sweden. Translated by William H. Carpenter, PH. D., of Columbia College. Edited by Nicholas Murray Butler, PH. D., President of the Industrial Education Association. New York Industrial Education Association, November, 1888. "Monographs." Vol. I, No. 6. Issued Bi-monthly. Pp. 28.

Carpenter of an authoritative exposition of Slöjd instruction in some of its various relations to the general subject of Education, by Director Salomon himself, enables me to close the description of this kind of elementary Manual Training with the words of the enthusiastic teacher to whom its popularity is largely due.

It will be seen that, however much some of the enthusiastic American advocates of Manual Training may seem at times, in their zeal to promote this new method, to overlook the relative claims of older methods of instruction and to ignore the existence of underlying pedagogic principles applicable equally to all sound methods of education, Director Salomon commits no such error. He sees and states clearly the relative value of different methods. He urges Manual Training only on pedagogical grounds, and treats it as but a single step;—one factor among many others equally important,—in a complete system of education; nor does he ignore the need of providing for the æsthetic development of the child. His argument is that so far from admitting the claim put forward by some zealous advocates of a purely practical training, that certain things should be taught at school because they can be practiced at home in after life; that very fact often furnished in itself a reason why they should *not* be taught; while, if certain desirable features are probably not to be acquired in the later life of the child, *that* is a very good reason for teaching them in school. There are many points of resemblance, between this essay by Dr. Salomon and the paper on "The Psychology of Manual Training," recently read by Dr. Harris before the meeting of Superintendents in Washington; and yet, some earnest promoters of Manual Training have felt dissatisfied with what seemed to their impatience the too conservative attitude assumed by Dr. Harris towards the Manual Training movement.

Dr. Harris, as it seems to the present writer, recognizes in the blind energy given by some to promoting the introduction of mere industrial work in school a danger lest the more important development of the æsthetic nature of the child may be ignored. He realizes that the great educational interests of the people are to be best promoted by the preservation of their proper relative relation between the various studies taught in the public schools, and that successful education must be based on the ascertained truths of Psychology. In this fidelity to the principles of sound Pedagogy he is in full accord with Dr. Salomon.

In the paper entited "The Slöjd in the Service of the School," first published in German in 1886, which is given in the "Monograph" already referred to, Dr. Salomon begins with the following quotation from Fichte: "Public education is the real vital question of our time." Briefly referring to the present activity in all educational matters, and pointing to the Catholic reaction in Belgium and Austria, and the reaction towards radicalism and free-thought in France, in evidence of the importance to the State of the educational question, he shows how the whole subject of education is in commotion.

Of the main topic of his paper he says:

THE SLÖJD IN THE SERVICE OF THE SCHOOL.

BY OTTO SALOMON, PH. D.

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One of these questions, and certainly not the one least capable of attracting to itself the attention of the public, is the *Slöjd*, physical labor in the service of the school. It is beyond doubt a great error to regard this particular educational question, which is coming more and more into the foreground, in any other manner than in connection with other contemporary phenomena in the field of pedagogy. By means of its material nature and condition, if one can so use the term; because of results from certain points of view already visible, the *Slöjd*, perhaps in a higher degree than any other existing or suggested branch of instruction, has been able to attract attention and a warm enduring interest, and this by no means in the lowest degree among those who have no connection with the school. This is, without a doubt, the condition of things, but just here one must take care, from a pedagogical standpoint, not to give to this movement for *Slöjd* instruction another significance than with right belongs to it. It is, namely—and the manner of its appearance in different countries proves this point—nothing else than a definite side of the universal reform of instruction, and is, accordingly, not to be considered or treated in any other way. That this point should be established is of decisive weight; for otherwise it might easily come about that the centre of gravity of the question might be shifted, and it would, consequently, be less to the purpose to place the *Slöjd* in the service of the school, than the school in the service of the *Slöjd.*

THE TWO CLASSES OF SLÖJD ADVOCATES.

In the discussion of these opposing points it cannot be strongly enough emphasized that the present movement for *Slöjd* instruction is never to be viewed in the same light with a similar effort tending in the same general direction. As a whole, this agitation for *Slöjd* instruction is divided into two different movements, which, although confused by a superficial observer, in reality have nothing in common except the name. The one is of purely national-economical significance, in that it is based upon the fact that domestic industry is decreasing more and more, and sets itself the task of taking measures to teach the rural population, especially fitting *Slöjd* labors for home occupations, whose products may be applied either in the house itself, or may serve directly for sale. This *Slöjd* movement sees in the school the means for extending *Slöjd* skill. The universal and real object of the school to be an educational institution for the training of its pupil must, in accordance with this movement, retire into the background before the design to give to the pupil the requisite skill to prepare certain objects destined either for sale, or for domestic use. In the choice of such labors, then, the decision must be made from points of view quite other than pedagogical. It can neither be taken into consideration, nor should it be, whether the kind of labor, or the method of instruction employed are of a character to influence profitably the education of the child. The objects produced become the essential part; the worker himself, on the other hand, is an incidental part. The support of domestic industry is the solution of the problem, and the most powerful factor thereto, the school, is withdrawn from its actual, definite task and compelled to serve purposes foreign to it.

It is wholly different with the other movement that desires to place the *Slöjd* in the service of the school. Manual labor arranged on pedagogical principles is, in many respects, an extremely efficient means for the education of children. It desires, therefore, to introduce the *Slöjd* into the school, not for the furtherance of the *Slöjd*, but because it believes that the school by means of this branch of study, will exert an influence, in a manner more perfect and as many-sided as is possible, upon the development of its pupils. Not the products of labor, but the laborers themselves are, according to this idea, the most important part. Whether the objects produced during instruction have a higher or lower market value; whether the children shall in the future perform the same labors, or not; whether the kinds of *Slöjd* with which the pupil is occupied in school are the best fitted for trade and home occupation—all these, and other points of view, are but incidental. They are as little to be taken into consideration in the arrangement of instruction as though, for instance, in the adoption of a school-book its practicableness after the completion of school should be considered; or as if the black-boards, ruled writing-books, and copies should be removed from the school-room because the children must, in the future get along without their aid. The kinds of *Slöjd* and their methodical arrangement are here only means and must be so regarded. They have, so far as the school is concerned, in themselves no other right, save in the measure they are fitted to perform the especial educational purposes to the attainment of which the school applies them; and the educational value that they have is the only standard by which to judge them.

A not unimportant part of the opposition, which — perhaps less in Sweden than in other countries — has arisen against the introduction of the *Slöjd* into the school, is, without a doubt, based upon a very explicable confusion of these two movements, so different in means and purpose, on the part of such teachers as stand aloof from the movement. Many a teacher, perfectly well cognizant of the difficulties met with in carrying out, even approximately, the many and weighty requirements that are the specific task of the school, perhaps mistakenly believes that *Slöjd* instruction will necessarily decrease the efficiency of the school and will turn it aside into directions foreign to its educational aims. It is not strange that he will not give his co-operation if he, with all respect for the advantages of domestic industry, still doubts whether it is right to lead the school away from its own high purpose on to foreign ground, however worthy of attention the same may be. The opposition, or, at least, the impassiveness toward the question of *Slöjd* instruction in which teachers often persist, is based, accordingly, to no slight degree upon a false conception of its real meaning.

THE EDUCATIONAL SIGNIFICANCE OF SLÖJD.

What educational signification has, then, the *Slöjd*, and what are the purposes that may be claimed for it, if it enters into the service of the school? The answer to this is naturally to be stated differently, according as the one concerned represents this or that pedagogical point of view. The disciples of Herbart will intensify the views and conceptions which the course of instruction treats by means of the self-dependence of the pupil. From this stand-point manual labor will be a new bond to unite concentrically the different courses of instruction, without its being necessary on this account to renounce the fruits that *Slöjd* instruction produces in and by itself. The supporters of the pedagogical system of Fröbel desire, in so far as they follow out the consequences of the teachings of their master, to introduce into the actual school, in this direction too, the method of the Kindergarten, where occupations form the real foundation of education and instruction. Others, by whom the difference between primary and technical educational institutions is not clearly enough accentuated, desire that the *Slöjd* shall assume in the school the form of a kind of preparatory mechanical education, in which the trades shall be represented as much as possible. Others, again, — and most of those connected with the school who have gone to the heart of the matter belong, certainly, to them — see in the *Slöjd* arranged according to pedagogical principles, an efficient educational means of high significance. They know and acknowledge that manual labor rightly arranged and rightly conducted is capable of awakening and strengthening in children certain qualities of unconditional value, not only for the school, but also, and before all else, for life. What they desire to attain by means of the *Slöjd* is, accordingly, — the expression may, after all, not be understood by those who are able to grasp this idea from the one side only — a formal education; and all may be tolerably well convinced that principally in this characteristic, as an efficient educational means, the *Slöjd* will later on be able to conquer its rightful place in the curriculum of the school.

"The aim of education is, beyond question, to bring about a development as many-sided as possible. The pedagogical value of a subject of instruction or practice easily shows, when viewed in connection with other subjects, to what degree it can assist in this development. Since, in consequence of the many-sidedness of the qualities and powers which the educator has to regard, no subject alone is capable of taking into consideration all sides of the formal education, such a choice of the different educational means must naturally be sought that they shall mutually supplement each other and together form a whole. If, then, a new subject, as such an educational means, is to be introduced into the school, then it is necessary to inquire what side of the development it can and must promote; as well as whether from it is to be expected a complete educational result. If it is then shown that this side had already sufficient attention, then the suggested subject is, in this respect, superfluous. If the contrary is true, it is to be and must be given place with the other subjects, unless the effort for a harmonious education is to be with the educator only a meaningless catch-word. The history of the introduction of drawing and gymnastics into the school furnishes pertinent examples on this point."

The value of the *Slöjd* as an educational means is, comparatively speaking, many-sided. Beside the skill to turn the hand to useful labor, which is taught the children to their undeniable advantage, it is also capable, in other ways of assisting to a notable extent in the development of varions powers and qualities valuable in after life. Among these are to be mentioned love for labor, and, as a direct consequence, industry and persistence. Self-reliance, exactness and attentiveness are other characteristics that are demanded in the *Slöjd*, and, accordingly, also attain development through it. That the *Slöjd*, like drawing, helps also to sharpen the eye and to educate the sense of form is obvious. Finally, as an object of *Slöjd* instruction may also be cited that through it the pupil will be inspired with a respect for manual labor; as well as that the school through it will be better able to further the so necessary physical education than has heretofore been the case.

Several pages follow in which the advantages and disadvantages of various kinds of occupations are considered. Many reasons are advanced in the end for the decision reached in favor of "Slöjd in Wood"; as finally developed, and now taught in the Training School at Nääs.

In the following pages the value of this method and the philosophical reasons which justify the preference are given. He closes with a word concerning the most essential factor in all education, the Teacher himself.

PEDAGOGIC ADVANTAGES OF WOOD SLÖJD.

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Another, and when it concerns a subject of instruction, not insignificant advantage in the kind of *Slöjd* in question is that it is well fitted for methodical arrangement. There can thus, after the necessary investigations and preliminary labors have been made, be set up a series of wooden models, in which the accompanying exercises proceed by degrees; from easy to difficult, from simple to complex. This fact is of importance, because a kind of labor can thus be first placed in the service of the school and made use for its purposes when it is capable of being subordinated to the laws that didactics recognizes as universally binding. Finally, it must not remain unnoticed that *Slöjd* in wood requires a number of tools and gives an opportunity for many different manipulations, in consequence of which it, perhaps, before every other kind of *Slöjd*, is best fitted to give at least a relatively universal skillfulness of hand.

The more tools and manipulations a kind of *Slöjd* requires, the greater is the education of the hand that is able to carry it out. This is a matter of course; just, as viewed from the same stand-point, it is an advantage if the pupil, in the execution of a task, is allowed to make use of as many tools and manipulations as possible. The criticism that is not seldom made by so-called "practical" persons against the *Slöjd* pursued for pedagogical purposes, that the object could be prepared much more easily and quickly without the use of this number of tools is, accordingly, irrelevant. It should be placed in the same category with the charge against a teacher of gymnastics, who, in certain exercises should direct jumping over obstacles, when the pupils could have gone their way much more easily without them. Such and similar remarks only show that the critic regards the Slöjd from points of view other than purely pedagogical, and that he places the finished work and its sale value higher than the development that the pupil has acquired during the work.

ADAPTABILITY OF VARIOUS KINDS OF SLÖJD TO SCHOOL PURPOSES CONSIDERED.

Concerning *Slöjd* in wood, it was previously stated that it comprised within itself as kinds of *Slöjd*, partly *Slöjd* in cabinet-work, partly *Slöjd* in wood carving and turning. On a nearer examination it will, however, be found that it is in reality the one first named, *Slöjd* in cabinet-work, that is perfectly capable of fulfilling the above mentioned demands for a manual labor applicable as a means of education; neither turning nor wood carving answer in themselves to the demands that must necessarily be made of them. Many friends of *Slöjd* instruction have, as far as wood carving is concerned, overlooked just this point and consequently, have allowed this kind of *Slöjd* to occupy a place in instruction that ought by no means to fall to its share. It may, perhaps, be here in place to enter briefly into some of the most essential, but not, however, weighty reasons, that are generally advanced to prove the usefulness of wood carving as a principal branch of instruction in the school.

It is at the outset, claimed that wood carving is of especially important significance for the education of the æsthetic sense, and that, therefore, without regard to its manifest faults, this kind of *Slöjd* should be diligently pursued. Against this, the following is to be said. Wood carving may be, indeed, of incontestable importance for the education of the sense of beauty, but from this it by no means follows that this is the case precisely at this particular stage. Such a conclusion is just as unwarranted as if, for instance, we should say, that because the theory of fractions is of great importance for the development of mathematical conceptions, it must precede in the school, instruction in arithmetic and geometry. Such a proceeding were foolish, and it would be just as unreasonable to make use of wood carving as an æsthetic educational means at a stage where it does not belong. If this æsthetical development shall be something other than an empty catch-word, then one must necessarily begin with the foundation; that is, the child must, in the first place, be accustomed to perform every labor with order and exactness, and it must be made intelligible to him, that it is a peremptory condition only to regard a thing beautiful when it is well executed, and that, therefore, an object carelessly made, be it decorated with as many ornaments as it will, is, and must be ugly. Experience shows distinctly, that if one really wishes, in complete seriousness, to develop the sense of the beautiful, one must proceed precisely in this way. In schools where it is overlooked that ornamentation always belongs to a last stadium, that it should crown the labor and not be the starting point, and where one begins early with wood carvings, work is, on account of bad execution, very often anything else but tasteful. He must be truly sanguine, who will imagine, or cause others to imagine, that such bunglings, in the execution of which, form and composition pass wholly into the background before ornamentation, can work to the advantage of an æsthetic education.

May not these superficialities, which often appear to have no other purpose than to attract the eye and to divert attention from the details of execution, on the contrary, instil into the pupils a wholly false idea of the nature of the beautiful? Might not the foundation, thereby be laid for a superficiality of observation, which, to a certain degree, might act injuriously upon the domain of the purely moral, in that the young would be systematically led to lay greater weight upon appearing than upon really being?

EDUCATION HAS HIGHER AIMS THAN AMUSEMENT; OR, EVEN, FITTING FOR LIFE OCCUPATIONS.

Another reason that it is customary to bring forward when the question has to do with giving to wood carving a dominating place in *Slöjd* instruction, is that such labors are better fitted for home occupation than those that are included within the province of *Slöjd* in cabinet-work; and since the school ought to work for after life, the pupils should perform precisely such labors as they can later carry out independently during, and after the time for going to school. This reason, too, as can easily be shown, has only an apparent value. In the first place, the *Slöjd*, regarded as a means of education, has far higher and weightier purposes than to serve only for an amusement in leisure hours. Several of these purposes have been previously indicated. If, in order to promote home occupation, wood carving should be favored in the school above *Slöjd* in cabinet-work, with the notion that it would be easier to find room in the house for a wood carver's table than for a carpenter's bench, it would manifestly have the same significance as if in the school in instruction in gymnastics — which, indeed, also has physical development for its material aim — the gymnastic appointments should be excluded because the pupils have no opportunity at home to place such appliances, and, accordingly, could not execute there the motions exercised in the school. A pedagogically educated gymnast, however could scarcely entertain such a view. On the contrary, he might say that precisely because the home can probably not provide such apparatus, without which a satisfactory advantage from gymnastics is not to be expected, the school must give its pupils opportunity to make use of the same in the appointed exercises. It is the same, too, with the employment of cabinet-making in the service of the school. So far from its being a fact that the difficulty — a difficulty, moreover, more apparent than real — of procuring at home the tools necessary for the pursuit of this kind of *Slöjd* should compel the school to throw its weight upon wood carving, which, from several points of view, is less fitting: the absolutely opposite mode of thought is, on the contrary, the right one. One must, indeed, conclude as follows: *Slöjd* in cabinet-making, but not in wood carving, is the most fitting kind of labor for the development of the child. Children might conceivably be able to occupy themselves at home with no other *Slöjd* in wood than wood-carving: accordingly the school, if it can, must choose *Slöjd* in cabinet-making for its pupils. Moreover, they who have their eyes upon what a *Slöjd*, rightly pursued, can and must accomplish, would scarcely recognize wood carving as an especially fitting household labor. The evil consequences of too long sitting still during development, have been so often set forth that it is universally considered desirable to obviate it to the greatest extent possible. Can, then, a *Slöjd* that is exercised sitting, and that, besides, must apparently overtax the eyes, he really pronounced a good domestic labor? Are not pupils, as well in the school as during household tasks already obliged to sit still enough? Only one answer to these questions is possible.

But even on the assumption that wood-carving is an excellent home occupation, one ought, nevertheless, by no means to draw the conclusion that the school should practice it, and in order to make way for it, should neglect genuine educational ends. Everything should have its true place and its proper time. It is with wood-carving as with many feminine decorative labors. Simple crochet-work or art embroidery, if the necessary conditions are at hand, can be learned very quickly. The school does not need to concern itself about them. Let it confine itself to its own task, namely to this, to lay the foundation. Then, will the kind of labor which, from the one point of view or the other, is best fitting for "life," be easily taken up when the time has come for it. Let the endeavor also be made that, at the expense of that which to-day may be useful for the development of the child, that is pursued which *possibly* may be serviceable to-morrow. Every day has its own care. This may be considered for all educational instruction, whatever branch it may concern, a correct fundamental principle.

If, furthermore, one will go somewhat nearer to the heart of the question, he will find that it is in a high degree doubtful whether the school by the introduction of this household labor that is suggested, will really derive advantage from that from which it proposes to derive advantage, especially if, as has, indeed, been recommended, this home occupation should be made obligatory.

Has, then, an extended experience not shown, alas, more than sufficiently, that the text-books and occupations of the school, in no way become, *in general*, so attractive to the pupils that they, after their entrance into active life, choose precisely those for amusement in leisure hours? Might not one, on the contrary, assume with a very great degree of probability, that if the school wishes to deter the children from a certain occupation, it needs only to compel them to practice it as much as possible, during the school period? The effect of the operation of this principle will, certainly, never be absent.

Much might still be added to the thoughts just expressed, but since this essay has already become more comprehensive than was originally intended, it is plainly time to close.

THE PARAMOUNT INFLUENCE EXERTED BY EACH INDIVIDUAL TEACHER.

A further element might still, however, be touched upon, because it is indisputably the weightiest where educational instruction is concerned, be it in *Slöjd* or in another department.

This element is the teacher. As I have earlier intimated that nearly all questions run out into a question of education or are solved by it, in the same manner might every system of instruction, or the method derived from it, be said to run out into the personality of the teacher. System and method are, in themselves, only empty forms; to the teacher it is reserved to breathe into them the life-bringing spirit. To give the most admirable method to a bad teacher, would be like placing a good sword in the hand of an inexperienced fighter. In the strife over different conceptions and over a different manner of proceeding, let this not be left out of sight, and let one, at the same time, always remember that as the teacher, so is also the school.

An authoritative statement issued in English by the Normal School at Nääs, follows; this will be given at the end of this paper, in connection with the "tables,"—giving lists of the tools and models used at Nääs, which were appended to the Report by M. Sluys.*

The following sentences from the farewell address to his pupils by Director Salomon, on September 1, 1887, afford a glimpse of the purpose, character, and personality of this remarkable teacher, who is himself a striking illustration of the value of the Teacher, set forth in the quotation given above.

The address from which the following words are quoted is given in full in "Educational Leaflet," No. 29, issued February 16, 1889, by the New York Industrial Educational Association, and with its suggestions of the warm personal relations existing between pupils and master, fitly closes this account of Slöjd and the Schools of Nääs.

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*See seq. pages 889–891.

FAREWELL ADDRESS TO THE STUDENTS AT NÄÄS.

By Herr Otto Salomon, Ph. D.

* * * * * * *

Ladies and gentlemen! You are now not about to *finish*, but to *begin*. At least, if I have been understood by you — and if *not*, the fault has undoubtedly been mine, not yours — you must have seen that it is the intention of this institution to make *self-reliance* an agent in every work, for every development produced by this work. * * *

Do not forget, however, that our instruction forbids every uncritical, slavish imitation; that as I have said many times, you can follow our system without using our models. For the models are not the principles, but the temporary expression of them; the models are the word, which may kill, while the spirit alone can give life, progress, development.

Development, that is, in a double meaning, the aim of the instruction. To rear the tender plant, to develop the manifold powers that are enclosed in it, to awaken, form, strengthen, to make more capable, more virtuous, to lead not so much forwards as upwards, is the aim of the instruction, an aim to which you may sacrifice joyfully your life's best thoughts and powers.

"He who has planted a tree has not lived in vain," is a Hindoo proverb, and it is true, for he who has by his work multiplied the useful, the good here below, has left traces of his life, and it is not a matter of indifference if he has lived here or not; but still more this expression may be applied to the *teacher*, to him whose aim is to make man himself the best, highest and most godlike here on earth, better and consequently happier. * * *

I said that our system of instruction must in a double sense write on its flag, *development*. It is a sign of life, standing still, a sign of death, and consequently there is nothing more dangerous for the teacher than to regard his own development as finished, than to fix once for all his opinions, his mode of proceeding. This is to knowingly prepare the ground for a most inflexible enemy to teaching, *routine*.

Take care! as we have tried during these weeks by discussions to clear up and improve — and I am most grateful to you for all the valuable contributions you have made — so must every one of you give something of his own personality and thus to the dead form give the vivifying spirit. From this point of view we now are present, not at the end, but at the beginning of work, and if you go to it with earnest intentions, though the hour of farewell is near, still our work may be done in common; for fortunately, it is not bound by the limits of time and space.

May the blessing of the Almighty, that falls from heaven like rain, continually rest on the beginning of your work, that is the feeling that now fills my heart and takes away the bitterness from this parting.

The Appendix to the Monograph of the New York Industrial Education Association, already quoted from, and entitled "The Slöjd in the Service of the School," and the "Tables of the Tools and Models used at Nääs," which last are given at the end of Part II of M. Sluy's report, ("Monograph No. 2, Vol. 2," March, 1889), follow here.

SLÖJD INSTRUCTION AS SET FORTH BY THE AUTHORITIES OF NÄÄS, SWEDEN.

Appendix.

The following exposition of the aim, method and means of *Slöjd* instruction, is the reprint of a pamphlet issued in English by the Normal School at Nääs:

A. Aim of the Instruction.

Whilst the elementary schools prepare the children *indirectly* for life, the chief aim of the teaching of Slöjd is to give the pupils formal instruction, that is, to develop their mental and physical powers. It has, also, for its material and practical aim, the acquisition of general dexterity of hand.

This formal education which Slöjd has in view, aims principally at instilling a taste for, and love of work in general; inspiring respect for rough, honest bodily labour; training in habits of order, exactness, cleanliness and neatness; accustoming to attention, industry and perseverance; promoting the development of the physical powers; training the eye and sense of form.

B. THE METHOD AND AIM OF INSTUCTION.

I. GENERAL PRINCIPLES.

Attendance at *Slöjd* instruction should be voluntary on the part of the pupils. In order to insure this, the work must fulfill the following conditions:

1. It must be useful.
2. It must not require fatiguing preparatory exercises in the use of the various tools.
3. It must afford variety.
4. It must be capable of being carried out by the pupils themselves.
5. It must be *real* work, not play.
6. It must not be so-called knick-knacks, that is, articles of luxury.
7. It must become the property of the pupil.
8. It must correspond with the capabilities of the pupils.
9. It must be of such a nature that it can be completed with exactness.
10. It must admit of neatness and cleanliness.
11. It must exercise the thinking powers and not be purely mechanical.
12. It must strengthen and develop the bodily powers.
13. It must assist in developing the sense of form.
14. It must allow of the use of numerous manipulations and various tools.

II. THE TEACHER.

1. The instruction must be given by a trained teacher, if possible, by the same teacher who instructs in intellectual subjects.
2. The teacher should conduct, superintend and control the work; but guard against directly putting his hand to it.

III. THE AGE OF THE PUPIL.

In order to follow with advantage the course of instruction, the pupil ought to have reached that stage of development usually attained at the age of eleven.

IV. BRANCHES OF INSTRUCTION.

The simultaneous employment of several kinds of *Slöjd*, acts detrimentally for the following reasons: A sufficient number of subjects are already taught in the school and every different branch of *Slöjd* is a subject in itself;

The time to be devoted to this work is short and limited;

By different kinds of work, the interest of the pupils would be easily directed,—therefore, the instruction in Slöjd should be confined to one branch.

For the above mentioned standard of age, *wood-Slöjd* is the most suitable. It includes carpentry, turnery and wood-carving.

Slöjd carpentry differs from trade-carpentry in the following respects:

1. As to the character of the objects made; in general, the objects are smaller than those made in the trade.
2. The tools which are used; for instance, the knife, is the most important tool in wood-*Slöjd* — in carpentry it is rarely used.
3. The method of working; in trade-carpentry there is division of labor — in *Slöjd* none whatever. Turnery may be taken as a different branch of instruction, and as such be quite well separated from wood-Slöjd.

V. THE NUMBER OF PUPILS.

Individual instruction is generally advisable. This is especially the case with *Slöjd*, which on fundamental and practical grounds can not be taught as a class subject; therefore the number of pupils taught by one teacher must be limited.

VI. THE MODELS.

In order to make the instruction as intuitive as possible, models ought to be used in preference to drawings. The form should be sketched either directly by placing the model on the piece of wood, or by means of a diagram drawn with ruler and compass on the wood.

In arranging a series of models the following points must be observed:

A. AS TO THE CHOICE OF THE MODELS.

1. All articles of luxury are to be excluded.
2. The objects made are to be capable of being used at home.
3. They are to be such objects that the pupils can finish them without any help.
4. They are to be such objects as can be made entirely of wood.
5. The work is not to be polished.
6. As little material as possible is to be used.
7. The pupils are to learn to work both in hard and soft woods.
8. Turnnery and carving are to be used as little as possible.
9. The models are to develop the pupil's sense of form and beauty.

In order to attain this, the series must include a number of examples of form, such as spoons, ladles and other curved objects which are suitable for execution by the hand *alone*, guided by the eye.

10. The whole series must be so arranged as to teach the pupils the use of the necessary tools, and to know and carry out all the most important manipulations connected with wood.

B. AS TO THE ARRANGEMENT OF THE MODELS.

1. The series must progress without break from the easy to the difficult, from the simple to the complex.
2. There must be a refreshing variety.
3. The models must follow in such progressive order that by means of the preceding ones, the pupils may obtain the necessary aptitude to make the following ones without direct help.
4. The models must be so graduated that at every stage the pupil is able to make an exact copy, not merely an approximate one.
5. In making the first models, only a small number of tools must be used; as the work progresses, the number of tools and manipulations should gradually increase.
6. At first the knife, as the fundamental tool, should be mostly used.
7. Rather hard woods should generally be used for the first models.
8. At the beginning of the series, the models should be capable of being quickly executed, and gradually, models which require a longer time should be given.

TABLE I.—*Tools used at Nääs.*

Tools.	Price of tools in Sweden.		Number of this tool necessary for simultaneous work in class of 12.
	K.	O.	
1 Turning Web	1	30	3
2 Leveling Saw	1	40	3
3 Common Saw	1	70	4
4 Compass Saw	0	78	1
5 Back Saw	2	25	3
6 Jointer Plane	2	80	8
7 Jack Plane	1	05	8
8 Smoothing Plane	1	60	8
9 Curve Plane	2	00	1
10 Round-nose Pincers	0	32	2
11 Flat-nose Pincers	0	35	2
12 Pliers	0	70	2
13 Tongs (Smith's)	0	60	3
14 Set of Paring Chisels	3	40	2
15 Set of Mortise Chisels	4	25	1
16 Gouges	3	90	1
17 Flat File	0	55	4
18 Round (½) File	0	55	6
19 Rat-tail File	0	55	4
20 Triangular File	0	25	4
21 Center-bit and Augers (24)	5	25	1
22 Awl (and case)	0	90	3
23 Knife	0	35	6
24 Draw Knife	1	00	3
25 Hammer	0	65	8
26 Mallet	0	55	6
27 Compasses	1	00	2
28 Double Compasses	0	60	2
29 Mandrels	0	14	6

TABLE I.—*Tools used at Nääs*—Continued.

Tools.	Price of tools in Sweden. K.	O.	Number of this tool necessary for simultaneous work in class of 12.
30 Screwdriver	0	30	3
31 Wabstrinque	0	45	6
32 Priming Wire (artillery) or Spout (Ger. Löffeleisen)	0	25	6
33 Screw-press	1	00	2
34 Axe	2	00	1
35 Beam Compasses	0	50	8
36 T-hevel	0	65	2
37 Try Square	0	25	8
38 Glue Pot and Brsuhes	1	60	1
39 Grindstone	4	50	1
40 Oilstone	0	45	3
41 Joiner's Bench	25	00	8
42 Metre (yard measure)	0	45	4
43 Turner's Chisels	6	00	1
44 Turner's Gouges	5	00	1
45 Sand-paper	1	65	1
46 Turning lathe	70	00	
	160	79	

At Nääs a complete outfit for 12 pupils costs 600 francs.

TABLE II.—*Series of* 100 *models used in the Nääs method.*

[All these objects are in wood. Those marked with a * are turned. Price of entire collection, 50 crowns, or about 70 francs.]

Models.	Tools employed in making each object. [The numbers correspond to those of first column, Table I.]
1 Pin	3, 34, 23
2 Prop for flowers (round section)	3, 23, 26
3 Prop, square or diamond shaped	3, 6, 37, 35, 23, 18
4 Label	3, 7, 6, 37, 35, 27, 23, 21, 18
5 Clothes-pin (without spring)	8, 8, 1, 35, 7, 23, 18, 29
6 Pin for horse-collar	3, 37, 1, 23, 14, 21, 5, 18
7 Paper-knife (or cutter)	1, 6, 35, 3, 23, 16, 29
8 Clothes-horse (or frame)	2, 7, 6, 21, 35, 31, 23, 18
9 Butter-Paddle	1, 3, 6, 35, 27, 35, 14, 23, 18, 29
10 Small flat rule	8, 6, 37, 35, 27, 5, 14, 23, 18
11 Cross-bar support for flower-pot	3, 6, 37, 35, 27, 5, 14, 23, 18
12 Spoon	8, 34, 7, 1, 14, 23, 16, 26, 32, 29, 18
13 Handle for hammer	2, 31, 23, 5, 18 29
14 Spoon	8, 34, 7, 14, 23, 16, 26, 32, 29, 5, 23, 18
15 * Tool-handle	3, 34, 25, 21
16 Butter-Spoon	3, 34, 7, 1, 14, 23, 16, 26, 32, 18
17 Board on which to cut bread	3, 7, 6, 37, 35, 27, 1, 14, 17, 6, 21, 29
18 Sock-form (for laundress)	3, 2, 7, 6, 21, 35, 31, 8, 18, 29
19 Sugar-scoop	3, 34, 7, 6, 1, 14, 8, 23, 27, 16, 32, 18, 29
20 Stocking-frame (for laundress)	3, 2, 7, 6, 21, 25, 31, 8, 18, 29
21 Scythe-whetter	3, 6, 37, 35, 8, 23, 18, 1, 31, 6, 18
22 Pegs	8, 7, 6, 36, 35, 27, 21, 8, 5, 23, 14, 18
23 * Pegs turned, mushroom shape	3, 7, 6, 37, 35, 27, 21, 7, 5, 2, 3
24 * Pin or plug for horse-collar	3, 34, 25
25 Axe-handle	3, 34, 6, 35, 24, 31, 8, 37, 3, 18, 29
26 Small dish for soft soap	3, 7, 6, 16, 32, 29, 35, 8, 14, 18, 29
27 Peg to darn stockings on	3, 34, 25
28 Sugar spoon	3, 34, 7, 14, 23, 16, 28, 32, 29, 5, 18, 21
29 * Bread-pricker (Swedish "Stapp")	3, 34, 25, 12
30 Open-work for flower-pots	3, 7, 6, 37, 35, 5, 8, 25, 18, 23
31 Stool for Trellis	3, 7, 6, 37, 35, 5, 8, 27, 1, 21, 16, 18
32 Rake-head	2, 6, 8, 31, 23, 18, 37, 35, 15, 27, 21, 18, 29
33 Pot Spoon	8, 34, 7, 1, 14, 8, 16, 32, 29, 24, 5, 31, 23, 18
34 Beetle	3, 34, 6, 35, 29, 8, 37, 21, 23, 27, 1, 14, 17, 29
35 Flour Spoon	3, 34, 7, 2, 16, 32, 29, 24, 31, 5, 14, 23, 18
36 * Weaver's Pulley	3, 34, 25, 27, 37, 5, 21, 14
37 Mallet	3, 6, 37, 27, 2, 8, 17, 35, 21, 29
38 Bread-shovel	3, 34, 7, 6, 1, 23, 35, 5, 14, 31, 8, 18, 29
39 Large flat rule	See Model No. 10.
40 * Boot-jack, with spur	37, 6, 37, 35, 23, 5, 14, 8, 18, 29

TABLE II.—*Series of* 100 *models used in the Nääs method*—Continued.

[All these objects are in wood. Those marked with a * are turned. Price of entire collection, 50 crowns, or about 70 francs.]

Models.	Tools employed in making each object. [The numbers correspond to those of first column, Table I.]
41 Shuttle	2, 6, 37, 31, 23, 18, 27, 16, 35, 1, 23, 14, 22, 18, 29
42 Nail-box	3, 7, 6, 37, 35, 27, 23, 14, 5, 2, 6, 8, 25, 29
43 * Roller for pastry	3, 34, 25
44 * Boot-jack (turned feet)	3, 2, 1, 6, 31, 23, 21, 35, 18, 8, 29
45 Hatchet-handle	3, 2, 24, 31, 6, 35, 8, 18, 29
46 Fisherman's reel	1, 8, 3, 1, 23, 27, 21, 18, 29
47 Small hand-cart	3, 34, 7, 7, 2, 37, 35, 5. 14, 26, 18, 29, 23
48 Salt-box	3, 7, 6, 37, 35, 5, 1, 23, 18, 8, 22, 25
49 Egg-rack or wash-tub (*porte-senfs on Cuvier*).	3, 7, 6, 37, 27, 21, 35, 8, 14, 17
50 Board for cutting bread (form of fish)	3, 1, 6, 31, 14, 18, 35, 7, 6, 23, 41, 29
51 Match-box with lid	3, 6, 37, 35, 51, 14, 26, 18, 29, 23
52 Match-box with friction	3, 6, 37, 35, 1, 23, 18, 21, 5, 35, 8, 17, 20, 25
53 Box with friction	3, 6, 37, 35, 1, 23, 21, 18, 21, 5, 27, 14, 25, 16
54 Pegs	3, 1, 2, 6, 8, 31, 23, 18, 27, 21, 35, 14, 29
55 Beetle for linen fastened on pin	See Model No. 34, and add 24 and 19.
56 Skimmer	3, 34, 7, 1, 14, 16, 31, 23, 26, 32, 29, 2, 24, 18
57 Boot-jack	3, 7, 6, 37, 35, 21, 2, 1, 31, 23, 18, 8, 14, 5, 29
58 Fish-spoon (grooved handle)	3, 34, 7, 6, 1, 14, 16, 32, 30, 3, 23, 31, 21, 18, 9
59 Covered box (two compartments)	3, 7, 6, 37, 35, 5, 14, 26, 37, 8, 21, 1, 23, 18, 2
60 Pen-box, for school use	3, 6, 37, 35, 5, 23, 14, 8, 26, 33, 29
61 Knife-box	3, 7, 6, 37, 35, 25, 1, 23, 18, 5, 14, 26, 8, 29
62 Box for dish-washer	3, 7, 6, 37, 35, 23, 1, 18, 5, 14, 26, 8, 25, 29
63 Scraper	3, 7, 6, 37, 35, 27, 14, 8, 25
64 Stool	3, 7, 6, 37, 35, 8, 36, 27, 21, 2, 23, 18, 14, 5, 4, 1, 25, 29
65 Salt-box	3, 7, 6, 37, 35, 5, 1, 23, 18, 5, 14, 26, 8, 21, 1, 33, 12, 25
66 Carpenter's square	3, 6, 37, 35, 14, 5, 8, 29
67 Carpenter's square, 4.50	3, 6, 37, 35, 14, 5, 8, 29
68 Beam-compass	3, 6, 37, 35, 27, 22, 15, 26, 14, 1, 16, 18, 29, 23
69 Picture-frame	See Model No. 12 and No. 48.
70 Spoon for skimming cream (clasped)	3, 6, 37, 35, 5, 14, 23, 27, 8
71 Oval bread-board	3, 6, 2 7, 6, 35, 8, 31, 17, 29
72 Large pot-spoon	3, 34, 7, 3, 1, 14, 2, 8, 14, 16, 32, 29, 21, 23
73 Carved bread-board	3, 2, 6, 35, 7, 31, 14, 23, 18, 20
74 Meat-beater	3, 6, 37, 35, 8, 14, 18, 21, 29
75 Carved bread-board	See Model No. 73, and add tools 23 and 14.
76 Water-bucket	3, 1, 6, 8, 14, 16, 17, 29, 2, 23, 18
77 Décimètre cube	3, 7, 6, 37, 35, 5, 14, 27, 8, 23, 21, 29
78 * Pegs	3, 7, 6, 37, 35, 5, 8, 27, 21, 23, 18, 34, 25
79 Rolling-pin	See Model No. 43; add 21, 37, 27, 5, 14, 18
80 Spoon for scullion (large size)	See Model No. 72, and add tools 5 and 21.
81 Large box for soft soap	3, 7, 6, 8, 37, 27, 14, 21, 16, 18, 29, 36, 2
82 *Swedish coffee-mill	3, 7, 6, 37, 35, 14, 26, 17, 29, 8
83 Foot-stool with slanting feet	3, 7, 6, 37, 35, 8, 27, 1, 23, 14, 18, 5, 29
84 Drawing-board	3, 7, 6, 37, 35, 23, 5, 14, 36, 8, 29
85 Box with compass (hinged cover)	3, 7, 6, 37, 35, 5, 14, 26, 8, 32, 25, 18, 29
86 Box with sliding cover	3, 7, 6, 37, 35, 5, 14, 26, 8, 23, 33, 29
87 Mason's level	3, 7, 6, 37, 35, 5, 15, 26, 25, 21, 27, 1, 18, 36, 29
88 Folding chair	See Model No. 43; add tools 27, 21, 25, 23
89 Spittoon	3, 7, 6, 37, 35, 36, 5, 8, 14, 25, 1, 16, 18, 29
90 * Butter-print	See Model No. 89; add tools 23 and 21.
91 T-Rule	3, 6, 37, 35. See Model No. 10.
92 Kneading-trough	See Model No. 89, and add tools 21, 23, 31
93 Chopping-tray	3, 7, 6, 37, 35, 5, 14, 26, 23, 8, 18, 29, 25
94 Tap (or plug)	See Model No. 27 plus tools 14, 23, 18, 29
95 Waste-box	See Model No. 89.
96 Étagère	3, 7, 6, 37, 35, 5, 23, 14, 27, 1, 31, 18, 29
97 Foot-stool	3, 7, 6, 35, 37, 27, 21, 4, 23, 18, 26, 5, 1, 29
98 Large reel	3, 7, 6, 37, 35, 15, 14, 5, 1, 18, 8, 27, 23, 21, 29
99 Chair	3, 7, 6, 37, 35, 15, 5, 1, 23, 8, 21, 18, 29
100 Bucket with handle	3, 34, 7, 6, 35, 27, 1, 36, 23, 14, 12, 18, 16, 32, 29

X.

THE PHYSIOLOGY OF MANUAL TRAINING.

INTRODUCTION.

The following paper, which is given in Miss Marwedel's pamphlet, "The Missing Link,"* as an abstract of a lecture delivered before the Manual Training Association of Leipsic by a distinguished professor of the University of Leipsic, is here assigned to this Appendix by a sort of natural affinity, in connection with the paper by Dr. Harris, which immediately follows it, on "The Physchology of Manual Training." These two papers alike possess the quality of suggestiveness, and can hardly fail to interest thoughtful educators.

Dr. Birch-Hirschfelder shows clearly the value of the direct training of the senses as furnishing an equipoise to the cultivation of the higher mental functions of the brain, the activity of which, otherwise, may tend to become dangerously excessive. He thus furnishes a strong argument, based on the nature of the organs and faculties of the brain, to those who regard Manual Training as an essential department of general education.

There is at first sight, apparently, a striking difference between the assertion by Dr. Harris, that an act is educative only "when first learned," and this by Dr. Birch-Hirschfelder, that "All education rests, from its positive point of view, upon practice—methodical practice. The development of the organs is promoted by orderly activity," but by the instance given by Dr. Harris of Dr. Preyers's child which, in its delight at the discovery, placed and replaced the cover on the box seventy-nine times in succession, and by the context which follows, it appears that Dr. Harris considers that this phase of the education of the senses should be mostly limited to the earliest years of the child's development. So that there is substantial agreement between them as to the fact, only Dr. Harris objects to a repetition in primary or higher schools of the training which the child has already given itself at home in infancy.

The value of the Kindergarten methods for very young children was long since fully endorsed by Dr. Harris. The question as to how far these methods are suitable for older pupils and whether a logical progression through all stages of education on Kindergarten lines and methods is practicable or desirable, is the mooted question; which, under protean forms, is now discussed wherever educators meet. The desirability of some form of manual training in the primary grades of public schools as a preparation for the High School Manual Training classes, is admitted by all the advocates of those higher schools; this is not, as we have already had occasion to know, however, by any means conceded as desirable by all educators.

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*See Appendix "J." Paper IV. Page 670.

There is another point concerning which our author-physician discriminates with a precision which commends his judgment to careful consideration; and that is when treating of the value of bodily exercise as furnishing a "compensation for the one-sided exertion of the activity of study" he distinguishes between athletics, *per se*, and such rational gymnastic exercises as may conduce to the training of the body as an essential part of a complete education.

As educators, he declares that "It cannot be our purpose to strive for the education of athletes;" which proposition, while it would, perhaps, hardly be accepted as an axiom by many Yale and Harvard undergraduates, will scarcely be denied by educators as a class. The physiological rationale underlying the necessity for sufficient muscular training is clearly stated, while the action and consequences of special athletic training are also plainly shown, and the arguments deduced therefrom in favor of "Instruction in manual dexterity," and the statement of the physiological purposes of such instruction, are noteworthy. His final summing up can hardly fail to please the advocates of Manual Training.

THE VALUE OF INSTRUCTION IN MANUAL DEXTERITY AS REGARDS BODILY DEVELOPMENT AND HYGIENE.

BY DR. BIRCH-HIRSCHFELDER, PROFESSOR IN THE UNIVERSITY OF LEIPSIC.

I speak as a physician, or rather as a medical schoolmaster. The physician looks at the question from two points of view: First, as it concerns the physicological development of man, including the development of the bodily functions in their relation to the mental. This may be called the *anthropological* point of view. Secondly, he considers in how far instruction in manual dexterity is of value for the healthy development of the body. This may be called the *hygienic* point of view.

Considered anthropologically, instruction in manual dexterity is pre-eminently adapted to the *education of the senses*. Though the education of the senses is so often advocated, I believe its full meaning has not always been fully comprehended. All education rests, from its positive point of view, upon practice—methodical practice. The development of the organs is promoted by orderly activity. Now, the education of the senses has two aspects; in the first place, it deals with the exercise of the *peripheral organs of sense*, the tools of the sense activity. For instance, we can educate the eye to measure dimensions better and to appreciate color impressions more exactly than is possible to the uneducated sense. The hearing, touch, and other senses can be educated similarly, but it would be a mistake to consider these *gymnastics of the senses* as the essential part of the education of the senses. The sense organ is an auxiliary of our mind; it takes cognizance of external impressions, but the impressions are conveyed to the brain through the nerves. There are receiving stations in the brain for the separate nerves of sense, and these again are connected with the central station, where the sense perceptions pass over into consciousness. In this sense-practice the capacity of the peripheral brain stations to act upon those which are connected with the activity of the senses is exercised. But, of course, there are other connections between the central receiving stations in the brain and those portions of the brain which serve as the instruments of the higher mental functions. Here a central process takes place in connection with the sense-activity, and the *sense-impression* elaborated into an *idea* at the periphery becomes a mental possession. I believe that when the high value of the education of the senses is emphasized, this cultivation of the connection between the central sense station and those parts of the brain which subserve the highest mental functions, is meant.

THE TWO METHODS BY WHICH KNOWLEDGE IS GAINED.

We can acquire knowledge in two ways: First, through the word (verbal, symbolic impression); and, second, by inspection. Therefore, the aim of the education of the senses coincides with that which is called instruction by inspection. The great importance of this method of instruction by inspection is very familiar to us physicians. Our medical academical instruction will have no other. We can observe very frequently how mere verbal knowledge differs from that which is gained by inspection. For instance, one may learn a great many anatomical facts from a book, but, if he tries to make practical use of them, this mere verbal knowledge is found immediately to be wholly unfruitful. There are often in our classes (and partly in consequence of the whole direction of their preceding education and culture) a number of persons who are so accustomed to identify learning with verbal reception of knowledge, that they have no adequate appreciation of the importance of education by inspection. It is an important fact of experience also that even good illustrations are no substitute for the inspection of the object itself, but only of value in refreshing and fixing the memory of that which has been seen. But our experience carries us still farther. The exact knowledge of certain relations which is required of the physician can not be gained by the mere inspection of the natural object of preparation. Manual dexterity must be brought in as a means of instruction. It is only by the methodical dissection of the natural object that the learner gains that certain knowledge of shape and connection which fits him again to construct the demolished organism in his mind. The conditions are very much the same in instruction in manual dexterity. For as the anatomist arrives at the clearest knowledge of the natural object by dissection, so the scholar learns to know most exactly the object which he constructs.

THE FOUR STEPS IN THE GAINING OF KNOWLEDGE.

Four stages of thorough knowledge may therefore be distinguished: (1) the knowledge of the object from a verbal description; (2) from a natural figure; (3) from the inspection of the object itself, and (4) from the personal *spontaneous* construction of the same. No other means can perfect the relationship between sense activity and the higher spiritual functions as well as instruction in manual dexterity.

NEGLECT OF THE EDUCATION OF THE SENSES.

Instruction has done but little, as yet, for the education of the senses. The only sense which has been given preference in this regard is that of hearing. Musical culture has not been neglected, but extraordinarily little has been done for the other senses. There are many more people who have learned to hear than of people who can see, who can observe. Right here, I believe, instruction in manual dexterity can do a great work. It exerts muscular activity on the one hand; but, not as in athletics, a combined and more refined muscular activity is employed here for a definite purpose. Here also an important sense is exercised, namely, the muscular sense. The cultivation of skill in a matter which exercises the hands does not depend, for the most part, upon the increase of the strength of the muscles, but upon the finer cultivation of the muscular sense which always, and, indeed, unconsciously informs us what the muscle is doing, and this muscular sense becomes exercised in a fine and many-sided way by suitable hand-work. But in instruction in manual dexterity the sense of sight is necessarily exercised in a high degree, much more than in the single subject of instruction which has hitherto worked in this direction, *i. e.*, drawing.

RELATIVE VALUE OF INSTRUCTION IN DRAWING.

I do not mean by this to question in the least the great value of instruction in drawing; indeed I wish its value were more appreciated for the education of the senses in the courses of instruction in the higher schools. Nevertheless, I must insist that the material essence of the object is more fully comprehended by instruction in manual dexterity than by the symbolic reproduction in drawing. Here I do not take any account of mere artistic considerations, for, of course, in this regard no comparison can be made between drawing and the production of objects by manual dexterity. A celebrated sculptor has told me himself that usually the experienced artist can not model a simple object correctly from his memory. Making use of a trivial example he said, "I could not even model a bootjack correctly from my memory." But I believe that if he had made a bootjack he would be able to model one from his memory. This example may serve to show in what way I believe that instruction in manual dexterity is of much greater value than mere reproduction by drawing for the cultivation of the senses, and for that combined activity of the senses which fructifies in the favorable development of the internal activity of the senses.

WHY DEFINITE INSTRUCTION OF THE SENSES IN CHILDHOOD IS SO DESIRABLE.

The objection might be made that while it is true that the education of the senses is extraordinarily necessary, yet ordinary life gives of itself so many educational impetuses that it is not necessary for instruction to aim especially at this point. The first and most special answer to be made to this objection is that practice can produce no such effects in any other age as it can in the age of childhood; and that, therefore, putting off this education of the senses until a later period of development will entail a loss which can never be made up. And, furthermore, it is by no means true that the unmethodical exercise of the different senses has any such effect as to bring about that adaptation for sharp perception and mental elaboration of the impressions of sense which is desirable. Simple experiments with cultivated and uncultivated men of the different classes would demonstrate with surprising clearness that very few individuals who have not been exercised methodically in the proper direction are adapted to receive and elaborate the simplest intuitions of space.

MANUAL TRAINING THE BEST FORM OF SENSE—EDUCATION.

By instruction in manual dexterity the different processes of the activity of the senses can be correctly carried on in a methodical way. Handiwork, cabinetmaking, carving, etc., exercise the muscles, and especially those of the arms, in many ways; and at the same time give many kinds of practice in measurement by the eye. And here also, in addition, the higher psychical functions can be acted upon, and attention can very easily be called in the course of the work to the æsthetical side of the things which are worked upon. I will not go any farther into this. I believe you can, from your own experience, already supply sufficient material to demonstrate that instruction in manual dexterity is in the highest degree suited to exercise the activity of the senses methodically. And we shall make no mistake in asserting that the reaction of such a methodical exercise of the activity of the senses upon the higher mental faculties deserves especial appreciation.

THE ADVANCE OF MODERN TIMES DUE TO THE GENERAL ADOPTION OF THE METHODS URGED BY FRANCIS BACON.

There was a time when verbal knowledge, culture by words, dominated the mental world. The greatest change which ever was brought about in the history of mankind has been accomplished in the course of the last two centuries, and certainly because natural philosophy has been developed in a way previously unanticipated. But natural philosophy rests, in its ultimate basis, upon *induction*. Proceeding from the observation of particulars (of occurrences under natural conditions or those determined by the observer), the inductive method leads to the knowledge of the natural law. The progress of the knowledge of natural law is promoted by the broader cultivation of method and by the perfecting of the apparatus of observation. Certainly, along with this is also to be considered the capacity of accomplishment of the sense organs and of the nervous apparatus therewith connected. which has been trained from youth and thereby perfected. The better schooling of the growing generation for the inductive method will be promoted when the influence of natural philosophy upon the farther development of mankind is recognized. Do not expect me to join those who refer all complaints about the deficient capacity for accomplishment of our generation, and its disposition to sickness, to the gymnasia, to the so-called *overburdening.*

THE ADJUSTMENT AND NOT THE AMOUNT OF SCHOOL WORK AT FAULT.

I do not believe in the overburdening in the sense in which it is many times entertained. I do not believe that our higher schools, in general, impose upon the youthful capacities absolutely too great tasks. But, nevertheless, a relative overloading frequently is produced, and that, indeed, by the one-sidedness of the practice. There is a lack of sufficient impetuses of compensation as an offset to the requirements which are not in themselves too high but yet are always one-sided. This lies many times in the modern formation of our lives, in the manner of life in the great city communities, in the many necessary claims which are otherwise made upon the time of the scholars. There is lacking that natural compensation for the evils of pure instruction by study which, under simple circumstances, in the country, in smaller cities, often comes quite of itself. For this reason, I believe, now there is so much the more necessity of emphasizing our duty, since the natural impetuses of compensation are continually diminishing, to introduce something into education which, while promoting the mental development of the scholar, may also at the same time act as a means of compensation for the one-sided demands of instruction by study.

I said that the second point of view from which the physician regarded instruction in manual dexterity was the hygienic. If we can look upon three kinds of things as the aim of therapeutics in general, in the words of Bacon: "To lengthen life, to maintain health, and to heal disease," then the second, the promotion of the maintenance of health, corresponds to the contents of what is included in hygienics.

ONLY TWO WAYS OF PRESERVING HEALTH.

If we now ask in what way we can maintain health, there are only two ways possible: We can either *protect* the body from evils which threaten it, or we can increase and *exalt the resisting capacity of the body.* Every reasonable care of health must be developed toward these two directions. The mere following of rules which contribute to the protection of health would, in its ultimate consequences, lead to the most extreme effeminacy of mankind. If such a goal were practically attainable at all, the absolutely protected man would be deprived of the educational good influence which the struggle for existence exerts. Important for the *public health* as is the annihilation of evils which, for instance, can affect health in the dwelling or other environments of man, yet I consider the second aim, making the body more resistant to evils, as more important for the *health of the individual,* because this second aim presupposes directly also the highest possible activity of the man.

HEREDITY, FOOD, ACTIVITY; THE THREE SOURCES OF HEALTH.

But how does the body and how do the several organs attain an exalted power of resistance against evils? There are three momenta which contribute to this. First, the resisting power of the single individual. The resisting power of each single organ depends upon inheritance, in a certain degree, upon the sum of capital which the individual man has brought with him into the world, which is due, in great part, to his parents and ancestors. In the second place, this resisting power depends upon the *nourishment.* The nourishment depends upon the quantity and quality of the means of nourishment in the widest sense, including the air. But this certainly very important factor is not the only determinative one; for, thirdly, the power of resistance is determined by the *activity of the organs.* Absolutely no normal development can be given to an organ, however well developed, an organism which might have the best and most favorable conditions of nourishment, if this factor of activity be left out. Every organism which is inactive, upon which therefore the physiological stimulus of activity does not act, becomes stunted. If a limb is placed in a plaster bandage it will become almost entirely immovable in half a year; if you fasten a muscle completely, the muscular substance disappears entirely, and so it is with all the organs. We are, therefore, dealing here with a relation which in good part is under the influence of our volition. Therefore, while our ancestors are answerable for whatever sum of life-material we have at the outset, and our conditions of nourishment in the widest sense are many times beyond our control, yet we can, to a certain degree, promote the development of our bodies as we wish by the excitation of activity even in the most limited spheres of life. Indeed, it may be said, that an excitation of the bodily activity arranged according to the end to be gained, and carried out in this sense, may even do wonders in conditions of life which in and by themselves are defective. It is only in this way that we can explain how a great part of the poorer men who live under unfavorable conditions of income, and are, by their circumstances, compelled to a vigorous bodily activity, very commonly surpass in health and in power of resistance to evils, the spoiled rich.

In this regard the nervous system acts like the other organs. Along with the original condition the influence of function is a very essential factor, and one of the greatest importance, particularly at the time of growth.

INACTION AND OVEREXERTION ALIKE DELETERIOUS.

There are two extremes which finally produce the same result. Perfect inactivity of an organ leads to stunting, but excessive strain involves the same danger. Therefore, also lack of exercise of the brain in a determinate direction leads to the stunting of its capacity of performance. We have enough examples of this in practical life that certain individuals by a one-sided activity of the brain in a determinate direction can do extraordinary things in this direction, while by the neglect of exercise in other directions they are in many ways inferior to the normal man. One-sided demands made upon the activity of the brain must have an especially injurious effect when they take place at the time of the greatest brain development. Here is often certainly laid the foundation of a diseased weakness of the brain and nervous system. No connoisseur will deny that the characteristic of the disease of our time is weakness of nerves. And the question has already been asked from very many sides what are really the causes of this wide-spread weakness of the nervous system, which shows itself in the most diverse forms? Doubtless there are very different causes for this, but one factor lies quite certainly in the one-sidedness of the demands which are made upon the nervous system at the time of its development. If any one by preference make demands upon determinate parts of the brain, and exercise the nervous system very little in other directions, there easily arises from this one-sidedness of the strain a disturbance of equilibrium which does not prevent the brain from producing eminent results in certain directions, but which always involves the danger of disease. Now, it may be said, that the danger of a one-sided influence of mental strain is to be worked against by intervals of rest adapted to the purpose. It is indeed quite correct that every rational hygienic measure is founded upon the alternation of rest and work. We can, by continuous muscular practice, cause our muscles to increase in volume and their capacity of work to be raised in a corresponding degree. This increase in mass and this access of capacity for work is caused by the muscles in their activity receiving more blood than in their rest.

ALTERNATION OF REST AND EFFORT DESIRABLE.

Now a removal of the detritus, which is produced by the activity and a restoration of new substance, is only possible when rest follows activity. By an uninterruptedly continuous contraction the muscle becomes at length exhausted and lamed. Now, just that which can be understood very easily about the muscles is true about the nervous system. In regard to this it is certainly true that every hygienic measure demands an alternation of work and rest. But the best kind of rest (in the waking hours) is that in which while the organ involved is recovering there is not perfect rest all over, but activity in other directions. Evidently the nervous system recovers more favorably if we do not let absolute rest follow strained, one-sided nervous activity, but occupy ourselves in other ways. And when, therefore, any one who is obliged to exert the higher functions of his brain continually, and to do this in a sitting and quite improper position, wants to have the best kind of restorative to compensate for these evils, we can only advise him to substitute movement for sitting, and work in other directions, and especially work of the muscles and nerves, for the one-sided exertion of certain mental activities.

ATHLETICS CONSIDERED.

It may be said that in this regard gymnastics and athletics offer the best compensation for the one-sided exertion of the activity of study. I do not in the least deny that athletics have a great hygienic value, and that the school athletics of our generation have had an extraordinarily favorable effect in this direction; and that we would notice yet much more the injurious effects of the continually sitting method of life of our youth, if school gymnastics had not been taken up as an authorized subject of education. But athletics is not, from its nature, a means which suffices perfectly as a compensation in the sense spoken of. Athletics is concerned principally with energetic muscular activity. Apart from its influence in promoting muscular development itself, this acts upon the activity of the breathing, the movement of the heart, etc. As these means have a very beneficial effect upon the young body, a very valuable stimulation of all the functions of the body may be attained thereby. But athletics in and for itself, just because it is concerned with energetic muscular activity, is not a means which can be applied continually. It can not be our purpose to strive for the education of athletes. We see that just the highest increase of muscular practice brings again the same dangers as from a deficient practice. It may be observed at this day that the disposition to disease of men with excessively practiced muscles, such as athletes and jugglers, is very much greater than in the average man. Plato calls attention to the same fact. I believe, in fact, that children from nine to fifteen years of age ought not to have more than four hours of real athletics in a week.

Instruction in manual dexterity stands midway between athletics, which excite a too energetic activity of the muscles, and instruction in study, with its one-sided activity of the central nervous organs. Instruction in manual dexterity includes gymnastics, and, I believe, that certain subjects which are practiced in instruction in manual dexterity are also beneficial in this sense. Joinery, for instance, contains a good proportion of valuable muscular practice; but it is necessary that in instruction in manual dexterity, as in athletics, as all-sided an activity of the muscles as possible should be excited, and where that is not possible to the same degree, at least, in regard to the groups of muscles which are set in activity, a certain alternation of occupations should prevail. It is, indeed, not to be feared that in the conducting of instruction in manual dexterity those peculiar malformations will result which are produced by a one-sided position of the body, and with which we are acquainted in different handiworkers, as in locksmiths, shoemakers, smiths, etc., but these consequences of a one-sided strain will always induce us to take care that all one-sidedness be avoided.

HYGIENIC VALUE OF MANUAL TRAINING AS A PART OF EDUCATION.

Instruction in manual dexterity, however, acts in a much higher sense upon the nerves than upon the muscles, and this is very especially to be considered. It works upon the organs of sense, such as sight, muscular sense, taste, etc., which it brings into continually combined activity, and it works upon the peripheral regions of our nervous system. It might, therefore, be said that purely mental instruction in study exercises the central parts of our brain, the finest tools of our mind. Manual dexterity exercises the sense apparatus, the peripheral nerves as tools of the senses. Athletic gymnastics act essentially through the powerful excitation of muscular activity. According to this, instruction in manual dexterity is in a higher sense gymnastics of the nerves, and just because it is a gymnastics of the nerves, it has an especially unburdening effect upon the brain, which has been strained by one-sided activity.

This consequence of the hygienic effect of instruction in manual dexterity is at any rate of the highest importance for the position of this subject in education.

What I have said may be summed up as follows:

(1.) Instruction in manual dexterity is a very praiseworthy means of cultivation of the senses as the tools of the mind. It completes that part of instruction by which the development of those parts of the brain which serve for the higher mental faculties are excited, while, by methodical exercise in the elaboration of the impressions of the senses, it reacts in favor of a harmonious cultivation of the mind.

(2.) Instruction in manual dexterity promotes sound bodily development when a suitable choice of work is made. It serves as a counterpoise to the influence of study-work, which is connected with mental strain and continuous sitting, while by the activity of the senses and nerves it has a diverting and unburdening effect: and, at the same time, excites the activity of the muscles as a lighter form of gymnastics, which certainly does not make athletics superfluous, but supplements them in a desirable way.

NOTE.—Among the hygienic benefits of manual training might be enumerated the joy of doing what is pleasant in constructing and fashioning the product of our own brain and hands.

XI.

THE PSYCHOLOGY OF MANUAL TRAINING.

READ BEFORE THE DEPARTMENT OF SUPERINTENDENCE, NATIONAL EDUCATIONAL ASSOCIATION, WASHINGTON, D. C., MARCH 7, 1889.

By William T. Harris, LL.D.

INTRODUCTION.

The appointment, during the annual meeting of the Department of Superintendence held February, 1888, of a Special Committee on Manual Training, who were instructed to report upon the subject at the meeting in 1889, was a clear indication of the interest taken in this subject by leading educators, and of their desire for some practical outcome of the discussion.

In the programme prepared for the meeting of this Department, held in Washington, D. C., March 6th, 7th, and 8th, 1889, Manual Training was given an important place and papers concerning its relation to education in general, as well as to free public school education in particular, were announced to be read by Superintendent Mac Alister, of Philadelphia; Professor William T. Harris, of Concord, Massachusetts; Professor Jerome Allen, of New York City; and Superintendent Seaver, of Boston, with discussions to follow each paper.

The names of those announced to open the discussions in each case comprised several of those best known among educators as leaders of the Industrial Education movement.

The absence of several of those so announced, and especially of Superintendent Mac Alister, whose paper on "The Relation of Manual Training to Body and Mind" was to introduce the topic on the first evening, was a disappointment. Professor Woodward, Director of the Manual Training School in St. Louis, who, with Superintendent Dutton of New Haven, had been announced to lead in the discussion of Superintendent Mac Alister's paper, read, in his absence, a carefully prepared paper on the same topic.

An animated questioning of the speaker with oral discussion of the various topics raised followed, in which a number of speakers took part, among them were Dr. E. E. White, of Cincinnati; Mr. Maxwell, of Brooklyn, N. Y.; Mr. Sheldon, of Boston; Mr. W. E. Anderson, of Milwaukee; Mr. N. C. Dougherty, of Peoria, Ill.; Dr. Hancock, and Professor Leipziger, Principal of the Hebrew Technical School, of New York City, who made a lengthy response to some objections suggested by Dr. White.

There was large attendance of the leading educators of the country and the occasion seemed to offer an unusually favorable opportunity for the presentation and discussion of the topics comprised in the general term of School Industrial Training. The programme had evidently been prepared with a view to bring out the ablest presentation of all phases of the subject by both the advocates and critics of the new movement. The large number of papers on various topics announced for this meeting left little opportunity for oral discussions.

The failure of the committee, on Manual Training in Schools, appointed at the previous annual meeting, to agree upon a report, was a great disappointment to those especially interested in the subject, who had hoped for some satisfactory solution of the problem at the hands of this committee, whose chairman, Mr. W. E. Anderson, of Milwaukee, Wis., announced the inability of the committee to report, and asked for further time, which was granted.

Professor Francis W. Parker had been announced to lead in the discussion of the important paper by Professor W. T. Harris, which was the opening paper of the second day. In the absence of Colonel Parker no other person was asked to discuss the paper, but the next paper in order on the programme was called. This was a paper by Professor Jerome Allen, of New York, on the subject of "Manual Training in Ungraded Schools." This was followed by a paper by Mr. George P. Brown who had been appointed to open this discussion. Papers were also read by Principal Ford of the Baltimore School and by Superintendent Compton of Toledo.

These papers and discussions, in which the advocates of Manual Training were largely in the majority, will be found reported in the forthcoming "Circular of Information No. 2, 1889," to be issued by the United States Bureau of Education.

Owing to the absence of Colonel Parker, as just recited, the paper by Dr. Harris was not orally discussed.

This paper, as was to be expected from the mental characteristics and habit of its author, and, indeed, as is clearly indicated by its title, treats of Manual Training as but an individual phase of education, to understand which the philosophy underlying all education must first be comprehended.

It is rich in suggestiveness and can hardly fail to be of value to all educators wise enough to perceive the subtle and far-reaching suggestions with which it abounds, even if they take little interest in the topic of Manual Training. The single sentence, "An act is educative when first learned, and *then only;*" has wide significance and application.

This paper reveals as with Ithuriel touch the ugly demon of materialism which lurks within some of the arguments advanced in the interest of Manual Training; though it may well be doubted whether many who have adopted the arguments have suspected their hidden tendency.

In view of the fact that the Slöjd instruction has recently been commended by some of the leaders of the Manual Training movement, as affording the connection between the Kindergarten and the Manual Training school, which all admit to be so desirable, the examination given by Dr. Harris to this method of manual instruction is timely.

The suggestions as to the need for the culture of taste, for distinctive educational effort to develop and train the child's apprehension of the beautiful, so concisely indicated in the closing sentences of this thoughtful paper, seem especially apposite to the present writer, to whom the growing tendency towards mere mechanical development, as contrasted with the æsthetic ideal set up by Walter Smith and his associates, gives serious concern; lest the purpose, so earnestly sought by them, of developing in Americans the art sense, shall be wofully perverted.

Although this paper appeared in "Education" for May, 1889, and will doubtless be included in the published "Proceedings" of the meeting of the Department,* it is so intimately related to the topics discussed in this Appendix, that it could hardly with any propriety be omitted from a collection which is designed to include the most thoughtful expressions of the leading American educators who have spoken upon this particular department of education.

THE PAPER.

BY WILLIAM T. HARRIS, LL. D.

In bringing forward my thoughts on the Psychology of Manual Training, I desire to say in advance that I shall endeavor to assume and maintain a judicial attitude towards this important educational question. I shall avoid the position of advocate or polemic so far as I am able.

As persons interested practically and theoretically in the management of schools, we meet from year to year to discuss the vital questions that may arise in our province. Practically and theoretically, it is our fortune and our choice to find ourselves arrayed on different sides of each question. A free comparison of opinions in a friendly spirit gives us each matters for further reflection and may lead to partial revision of opinions previously held. A free comparison of grounds or reasons for opinions is still more profitable. All search for grounds, all search for principles goes back out of the region of surface, and diversity of facts — goes back out of the multiplicity of details, towards unity. From differences we converge towards agreement when we begin to compare the grounds of our opinions. Principles and fundamental grounds are held in common by all minds, and this is necessarily so in case of ultimate principles at least.

EDUCATORS CLASSIFIED AS "CONSERVATIVE" OR "PROGRESSIVE."

Now as a class of people interested in the management of schools we have two opposite trends of opinions before us — we may divide here, one class of us tending towards conservatism, and the other class tending towards new experiments with a view to progress and improvement. One class holds by the heritage of the past and strives to conserve its power. What is established has been established through struggle, and the victory of the strongest. A study of the grounds for the existence of what is, discovers many and powerful reasons for the continuance of the existing order even in presence of the fact that defects are everywhere visible. The conservative sees the defects, but attributes them to inefficient administration, and not to essential shortcomings in the old system itself.

On the other hand, the party whose watch-word is progress bends its mind on the discovery of what is inadequate in the old system. It marshals the shortcomings and refers them to vicious methods inherent in the old system. It looks about for remedies and undertakes radical changes, bravely confident of their success. And inasmuch as the teaching profession is for the main part engaged during its daily tasks in the work of repression (inhibition), holding back pupils from doing wrong or improper things, teaching self-control and that action of the will which psychologists, call inhibitory it (the teacher's profession,) tends toward the conservative side too readily. It is engaged in struggling against caprice and arbitrariness, against raw, unformed habits and manners, against thoughtless disregard of the interests of others. This effort is apt to swallow up the teacher and cause neglect of that other side of well-training—the side of spontaneous, original activity. It neglects the positive for the negative, because the negative is the first and indispensable, while the positive may appear of itself without any education, after the school period is over, or outside of the school. Mere positive will-power without the negative or inhibitory power will produce only anarchy. The new human being must learn to inhibit or hold back by an effort of will his native mere animal impulses and desires, having due regard to the requirements of social existence—cleanliness of person and clothing, courtesy and decency of manners towards others, purity of life, temperance, prudence, fortitude, and justice, all requiring this inhibition (or self-restraint over impulse), and conformity to pre-ordained ideals of order. Mere spontaneous originality attacks all these things and runs riot.

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*The report of the Proceedings of the 1888 meeting of the Department of Superintendence was published by the U. S. Bureau of Education as "Circular No. 6, 1888." The report of the 1889 meeting will be similarly published as "Circular No. 2, 1889."

CHINESE CONSERVATISM.

On the other hand, mere prescription, mere inhibitory will-power developed to extremes produces only a mechanical civilization—a dead mechanical state of social existence. We look upon the Chinese education as productive of such a condition. All is cut and dried and given to the pupil as a ready-made form into which he must fit himself by inhibition of natural caprice and inclination. The consequence is the least possible progress and the completest administration of the old system.

What the philosophy of history must regard as the ideal standard of progress among nations is therefore not a mere perfection in administration, for this is achieved in the perfectly stationary empire of conservatism.

The ideal standard of progress is found in the form of government which secures the greatest degree of individual development while not losing the centralized power of the whole. In the patriarchal empire the social whole is perfect at the expense of individual freedom. We Americans are apt to think that the German empire sacrifices to some extent the development of the individual for the sake of the perfection of the administration of the will of the social whole. Certain it is that the German statesman looks upon our American regime as sacrificing the welfare of the social whole in order to give an unreasonable margin for individual whims and preferences.

The Anglo-Saxon doctrine (expressed in French words)—*laissez faire*—is thought to go too far when it permits parents to choose illiteracy for their children, or when it permits an illiterate community to substitute lynch law for the regular judicial process.

However this may be regarded there is certainly a mutual relation between the form of government, with its administrative process, and the self-activity of the individual; and that government is best which secures the greatest perfection of central administration through the greatest development of individual freedom. But it remains true that the self-activity of the individual must be strictly limited by the necessity of perfect central administration for the good of the whole.

TRUE EDUCATIONAL PROGRESS.

May we not in like manner name our criterion of Educational Progress as the approach towards a system that secures the greatest individual self-activity of the pupil while it builds up in his character perfect obedience to law, divine and human, and a sacred regard for truth.

While our progressive wing of superintendents do not always move forward in a straight line, for not all change is progress, yet on the line of cautious experiment there is most advance to be hoped for. I think that the friends of progress will admit that out of one hundred changes not more than one real gain results. Yet without experiment there might be no progress at all.

In the present question, that of Manual Training, we have eminently able men in our body taking strong grounds in its advocacy and initiating bold experiments in the direction of adopting it into the system of elementary instruction. On the other hand we have men who look upon the experiment as unnecessary for various reasons, or else await the issue of the experiments, thinking that it is safe to adopt the new system after it has been proved a success. Experiments are so costly that one must be cautious in undertaking them. Ninety-nine fail and one succeeds. Meanwhile debate and discussion will aid us in interpreting the results of experiment as they appear. It is safe even for conservative-minded men to approach the subject theoretically.

MANUAL TRAINING IN RELATION TO PSYCHOLOGY.

The Psychology of Manual Training is concerned chiefly with the mental effect of such training and a comparison of its results with those of other branches of the course of study pursued in school. What is called the "educational value" of such training in the use of tools is a matter for psychology. Social necessity, the necessity for useful labor to provide a subsistence, this is not a psychological matter in its primary aspect, but only in its secondary, or indirect relation to mind — the effect of a consciousness of possessing the ability of independent self-support in elevating the tone of character, or the effect of shortening the era of childhood and hastening the day in which the child assumes the responsibility of self-support. Whatever the ground for introducing a branch into the course of study, there is evidently a direct or indirect psychological question involved.

M. Sluys, of Belgium, tells us that in Sweden, "In the beginning the economic conception was generally adopted, and everywhere manual training was looked upon as a means of preparing the children of the common people to earn their living. But gradually it came to be recognized that manual training has a more elevated purpose and one indeed more useful in the deeper meaning of the term. It came to be considered as an educative process, for the complete moral, physical, and intellectual development of the child." He affirms that in Sweden the combination of manual training and the teaching of purely theoretical subjects "ensures the integral cultivation of all the faculties and all the aptitudes which make up the complete man."

The expression which we often hear used by the advocates of manual training — "put the whole boy to school," states in a plain, forcible way the meaning of the phrase "integral cultivation of all the faculties and all the aptitudes which make up the complete man."

A MISLEADING DEFINITION.

It has been fashionable in educational treatises since the days of Pestalozzi to define the province of education as "the full and harmonious development of all our faculties." This is, however, a survival of Rousseauism, and like all survivals from that source, is very dangerous. It is of first importance to consider this definition in the light of psychology.

At first glance we see that it makes no discrimination among the faculties themselves; all have a right, each has a right to cultivation, and the only limitation of this cultivation is found in the word "harmony." What the harmony should be is not said. It is implied, however, that the harmony once reached, there would be a perfect human being. Harmony implies a sort of balance, and that there is no faculty of the soul which may be developed supremely — no faculty like that of Divine Charity for example, which should be supreme.

Again, this definition ignores the great distinction between our higher and lower faculties, between our faculties that are means to ends above them and those faculties which are ends in themselves. Sound psychology for example looks upon ethical insight as higher than insight into what is useful as a means to an end. The adaptation of means to ends — the use of physical strength, industry, eating and drinking, any sort of bodily training is subordinate to the question of the end for which it is used — moral purpose being esteemed higher. Moral faculty is supreme as regards all such things and is not a coördinate factor.

Æsthetic faculty, taste for the beautiful, is not regarded as coördinate with moral faculty by any people since the Greeks or before the Greeks. Gracefulness was the supreme end of life and esteemed to be even higher than morality in Hellenic art. It was in the Greek thought that this notion of harmony arose as a symbol of perfection. For in Greek art alone, the physical and psychical are in perfect balance. Not so in Christian art,— and far otherwise in the Christian religion. For Christianity teaches that food, drink, raiment — or creature comforts of all sorts — yea, life itself is infinitely beneath consideration when weighed against the spiritual service of humanity. Bodily health and vigor, sound digestion, good sleep, keen sense-perception, are all good if rightly used, or subordinated to higher faculties; but to speak of them as forming a harmony with the higher is placing the soul and body on the same plane, and this is a fundamental error in educational psychology.

In the third place the definition ignores the distinction between man as an individual and man as social whole, the state, the civil community, the church, the family. It fancies man the individual to be something complete in himself and without relation to society — just as we can speak of a clock or any piece of mechanism as complete when all its parts are present and properly adjusted. Man has two selves; one his natural self as puny individual, and another his higher self embodied in institutions. This is the worst defect in the definition, because it leads the thought of the educator away from the essential idea of education, which is this: Education is the preparation of the individual for reciprocal union with society — the preparation of the individual so that he can help his fellow men and in turn receive and appropriate their help.

The "harmony" definition is abstract, this definition is concrete. An abstract definition is liable to misinterpretation, the concrete one is not. Reciprocal help of social whole and individual in the first place implies both special and general education. To help one's fellows one must get skill in some useful occupation. This may be in any realm of human labor, physical or intellectual. But to be able to receive the help of one's fellow men implies general education, the capacity to receive and appropriate the help of institutions — the spiritual help of the race — in science, art, literature, and moral and religious ideas, as well as in the matter of creature comfort. The world market yields to the individual man for his day's labor a share in the productions of the world; necessary food, clothing, and shelter, luxuries, amusements, churches, libraries, lectures, newspapers, and books. The prudent man buys wisdom and develops his lower faculties only to the extent that they are means to this higher end of acquiring wisdom and dispensing it to others.

This criticism of the definition of education which looks toward a harmonious development of all our faculties does not rule out manual training from education, but the contrary. Manual training fits very many for some useful occupation which they may fill as their special vocation. Neither does it prove that manual training is not of a general educative character. That is something to be investigated.

THE SLÖJD INSTRUCTION OF SWEDEN.

The Slöjd instruction, according to Dr. Otto Salomon, the director of the famous Manual Training Normal School at Nääs, in Sweden. secures the following educational results: —

1. Skill in the use of tools; 2. Love of labor — industry and persistence; 3. Self-reliance; 4. Exactness; 5. Attentiveness; 6. Sharpens the eye and sense of form; 7. Good bodily training.

In another connection he gives its educational results as, —

1. Acquisition of general dexterity of the hand; 2. Instilling taste for work, and respect for rough, honest, bodily labor; 3. Training in habits of order, neatness, exactness, cleanliness; 4. Accustoming to attention, industry, and perseverance; 5. Promoting the development of the physical powers; 6. Training the eye and sense of form.

There is no disputing the assertion that the Slöjd is educative when we consider that all work and all play of every kind are educative in one way or another.

When the domestic work (Hus-slöjd), which formerly flourished in the households of Sweden — it consisted in the making of knick-knacks chiefly out of wood — when this failed because of the introduction of more elegant machine-made goods, far more tasteful and elegant in form, at a very low price, the peasant could not afford to compete, and household work tended towards neglect and disuse. It is said that more attention was given to farming as a consequence, but farming could not occupy all the time in the season of long nights and short days. Hence the rise of an association to restore the Slöjd or domestic manufacture of knick-knacks, in 1846. In 1872, the government began to encourage education in this branch of labor. At first, wood carving was urged; but only to provoke resistance. But later it has been decided that variety of work is essential, and at the Slöjd normal school at Nääs the various tools of the carpenter are taught, and also those of the wood turner, and the blacksmith, besides wood carving; the making and mending of simple articles is practised; even wheels and carts are constructed, but mostly such articles as wooden spoons, boxes, boot-jacks, mallets, and netting shuttles. The number of schools in which this work is taught had increased to seven hundred in 1884, from eighty-seven at the time of our Centennial.

When we admit that the use of tools in the manufacture of articles of wood or iron is educative, we do not say much for it. All games of boys — like marbles, quoits, base-ball, jack-straws — are educative, especially in the matters (*a*) of development of physical powers; (*b*) the acquisition and dexterity of hand and accuracy of eye; (*c*) in perseverance; (*d*) in attention.

A game of whist cultivates circumspection, careful attention, the calculation of probabilities, and such matters.

THE BEGINNINGS OF INFANT EDUCATION, AS STUDIED BY PROFESSOR PREYER.

The first beginnings of these things in children are of great interest educationally. The scientific observations of Professor Preyer have taught us how important is the epoch when the human infant ceases to clutch objects only with the four fingers like most of the ape family, and learns to use his thumb over against his two fingers. This contra-position of the thumb began in the case he records about the twelfth week of the infant's life—at first a sort of reflex action without the will, and then soon after produced by the will so that contra-position of the thumb was quite attained by the fourteenth week. The infant rejoices in each new power gained, and incessantly practises it with voluntary attention until it by degrees sinks into a habit.

The first look of attention on the part of the child of Doctor Preyer was given to some swinging tassels on the thirty-ninth day. On the ninth week it noticed and gave attention to the ticking of a watch.

Other important epochs are the following: 1. Holding up its head by the act of will in the eleventh week. 2. Standing alone in the forty-eighth week. 3. Walking in the fiftieth week. 4. Recognition of its mother on the sixty-first day. 5. Recognition of its own image in a mirror in the sixth month—stretching out its hand to the image—also recognizing its father's image and turning to look at the real father and compare him with the image. 6. In the seventeenth week is noticed the first recognition of self, indicated by attention to his own hand; and six weeks later an elaborate series of experiments of touching himself and foreign objects alternately. 7. The discovery of itself as cause when it can produce sound by rattling a paper, or by striking one object with another, or tearing asunder a piece of paper—this is a most delightful discovery to the child. 8. But imitation, which begins about the fifteenth week and by-and-by develops into the use of language, is the most interesting evidence of the growth of the intellect.

This glance at infant life reminds us that in education things that are very trivial at one epoch are of exceeding importance at another. In cases of arrested development the educational value of such matters as the contra-position of the thumb—the exertion of the will in supporting the body erect, and in imitation, is coming to be well understood, as one may see in recent schools for the feeble-minded.

EDUCATIVE IMPORTANCE OF METHODS DEPENDENT WHOLLY UPON THE ORDER OF THEIR DEVELOPMENT.

But the order of development of these things is all important. An act is educative when first learned, and then only. After it has become habit it is a second nature—a new nature produced by the will, and is no longer educative. Man as a bundle of habits is a self-made being.

Professor Preyer's child was so delighted with the discovery that it could put a cover on a box, that it deliberately took it off and replaced it seventy-nine times without an interval of rest. It was an educative step in its development—a step in the discovery of its selfhood as an energy, as well as a step in the discovery of aptation in the external world.

Many educational devices have been proposed for schools, which merely repeat lessons that the child has already made for itself in infancy. The so-called object lessons of school are quite frequently of this character. So lessons on the properties of objects—the qualities of wood, stone, metals, etc., are not of much use in school because such things are provided for in the child's self-education. I do not of course refer to the scientific study of such things, which classifies and exhausts those qualities, and gives the history and geography of the object—science is a very different matter. The cultivation of the powers of observation in our schools—this too, is very often the farce of repeating lessons which have been learned by the child before he could talk.

Now all the lessons of infancy involve such training in dexterity of the hand, accuracy of the eye, the sense of form, industry, perseverance, the gaining of the power of careful attention, and the development of the body—such training as is claimed for the *Slöjd* education. Moreover, the lessons of cleanliness, and neatness, and industry are taught by the good mother quite early to her child. The child learns to use knife and fork and spoon very early. By-and-by he learns to use the jack-knife, and we all know the self-education that goes on in the use of this tool among Anglo-Saxon boys.

But what of all this? one inquires. Although it is educative, it is not properly school education. How does such infant education differ from reading, writing, arithmetic, geography, history, yes, even from grammar? Here is the vital point of our discussion.

THE POWER OF ABSTRACT REASONING THE DISTINCTIVE CHARACTERISTIC OF MAN.

Man elevates himself above the brute creation by his ability to withdraw his attention from the external world of the senses and give attention to energies, forces, producing causes, principles. He can look from the particular to the general, without losing the particular he grasps together the whole realm of the particular in the general — or in more significant language — in mastering the cause of anything he grasps together and comprehends an indefinite series of effects. He is not obliged to hold the details, that is to say, memorize all the facts and hold their details in a store-house. He can see them all in a principle — he can see in a cause its possible consequences. Understanding the meteoric process, he can readily explain any step in it — clouds, rain, snow, evaporation, fog, et cetera. Without this knowledge of the general, which always rests on some insight into causal process real or supposed, man would be bound down to the present fact before his senses. But with this knowledge man is able to see in the present fact its past history; he is able, moreover, to see in the present fact its future as a possible fact which he may realize by an act of his will.

Man differs from the animal in this great power of seeing ideals and in reinforcing sense-perception by adding to each thing or fact before his senses the vision of its past and the vision of its future. Man thus becomes comprehending; he explains the fact by its process of evolution, he becomes practical or a will-power through effecting some change or modification in the thing or fact in order to realize his vision of its ideal.

RADICAL DEFECT OF A FALSE PSYCHOLOGY POINTED OUT.

A false psychology tells us that we derive all our knowledge from sense-perception. We see form or shape, and color; feel, taste, smell, or hear, hardness, flavor, odor, and sound; but we do not by any of these learn the idea of causal process. This comes through thinking, and is an original acquisition which thinking mind brings with it. By this idea of causal process all the data of sense are transformed radically. They are given us in sense-perception as independent realities. In thinking them by the aid of causality, we make all these matters of sense-perception into phenomena — or effects and manifestations of underlying causes which are not visible or tangible — not flavors, sounds, nor odors.

No generalization is possible without ascending from the immediate thing or fact to the causal energy. By their common causal energy we unite objects into classes, we unite the various heterogeneous things, such as acorns, oak-leaves, roots, saplings, trees, oak-wood, in one causal process of the oak.

Without the idea of causality we could never distinguish external objects from our feelings, and hence, experience never could begin.

Man goes back from the fact to its producing cause. But he goes back of its producing cause to a deeper cause that unites two or more series of producing causes — back of the oak and pine to tree in general; back of tree, and grass, and lichen, to plant in general; back of plant, and animal, to life in general. Man's power of thought rises from thing to cause, and from cause to cause, leaving a smaller and smaller residium of mere sense-data, and yet getting nearer the underlying reality which causes all these sense-data.

BY THOUGHT, AND NOT BY SENSE-PERCEPTION MAN PERCEIVES TRUTH.

This is the great point for educators to observe. We do not get at the true reality by sense-perception, but by thought. Force is never perceived directly by the senses — a thing is here and a thing is there, but motion is not perceived — only inferred; force is only inferred. Thought puts together this fact and that, this present one and that past one, and unites them by the idea of causality, and the idea of force is born.

So thought produces the idea of space, pure space containing all, infinite in extent, and yet not material, not to be perceived by any of the senses. With the ideas of space and time — ideas that thought generates of itself in order to think the data of sense-perception into a consistent whole — with these ideas of space and time the idea of quantity is evolved and mathematics becomes possible.

In mathematics man beholds not merely a few data of sense-perception, but the universal conditions of all sense-perception. The laws of quantity as formulated in arithmetic, geometry, and the calculus give us the logical conditions of the existence of all matter and all motion, not only all that exists, but all that may or can exist.

DIFFERENCE SHOWN BETWEEN THE NATURE AND RELATIVE IMPORTANCE OF VARIOUS EDUCATIVE PROCESSES

Now this must be borne in mind when we make comparison of the educational effect on the mind of a child produced by learning arithmetic and geometry with that produced by learning how to make a box or a joint, or weld two pieces of iron. Grant that all these processes are educative, at least in the first process of their acquirement. To make a box requires special applications of knowledge of a special kind — measurement, adaptation, dividing with the saw, the use of the hammer and nails. It is special, and there is something learned regarding the texture of wood and nails, some skill or knack acquired in the handling of tools — some pleasurable feeling of self at the consciousness of what one can accomplish by his labor. But in the study of mathematics there is an immeasurably higher feeling of self in the perception of the power of the intellect not merely to know passively, but to know actively, not merely to know the small portion of the universe presented to its immediate senses, but to know the conditions of existence of all matter near and remote, now, in the past, and in all future time. What a glimpse of the dignity and commanding eminence of mind arises through the study of geometry! The three angles of any triangle are equal to two right angles — the pupil need never measure one real triangle to know this. On the basis of the ratios of the sides of the right angled triangle to one another, man proceeds to measure all things inaccessible to manual measurement — he measures the distance of the sun and of the fixed stars. Compare the feeling of selfhood that is gained by the soul in the use of the tools of thought with that gained by any form of manual labor.

In learning arithmetic the boy learns to quantity and measure all things numerically. It is not coördinate with the knowledge of carpentering, but it underlies it; at least, there can be no use of the carpenter's rule without some arithmetic.

MAN'S CAPACITY FOR SOCIAL ORGANIZATION THE BASIS OF ALL EDUCATION.

But the school studies are for the most part given to a knowledge of human nature and human combination, rather than to a knowledge of material things. This is due to the fact already seen, namely: that man is a social being, and is all that he is as a spiritual being — an educative being — through this fact of organized existence in institutions. All science, all literature, all art, the whole world of learning in fact, takes its rise in man's dependence on society. Society is the miraculous instrumentality by which each individual aids every other and in turn is aided by all. In food, clothing, and shelter, he brings by commerce all productions of all climes to his market, collecting from all and distributing to each.

In matters of human experience it is still better, because the aggregate of human wisdom does not have to be divided in distributing it. Each man may receive it whole if he will only learn the symbols in which it is stored up. If the child will learn how to read and write, he may learn the experience of the race through the countless ages of its existence. He may by scientific books and periodicals see the world through the senses of myriads of trained specialists devoting whole lives to the inventory of nature. What is immensely more than this, he may think with their brains and assist his feeble powers of observation and reflection by the gigantic aggregate of the mental labor of the race. This is the great meaning of school education; to give to the pupil the use of the means for availing himself of the mental products of the race. Compared with what he receives from the race the productions of the most original of men are a mere speck in a wide field of view. Every one may add something to the aggregate of the world's knowledge, but he must, if he is educated and rises above the brute, receive infinitely more than he gives.

INFINITE DIFFERENCE BETWEEN THE RESULTANT VALUE OF KNOWING HOW TO READ, OR, SIMPLY, KNOWING HOW TO MANIPULATE THE TOOLS OF THE CARPENTER.

Hence, in comparing the educative effect of learning to read with the educative effect of learning the carpenter's trade, we must consider this difference of scope. The one leads to knowledge of a few tools and a limited sphere of the botany of trees — an empirical, but not scientific knowledge of a few wood textures, a few simple processes of combination into shapes for use or ornament — all of which brings also a limited knowledge of self and of human nature. Its whole educative effect is exhausted in a brief time at the manual training school — for we are told by authorities that manual training for educative purposes must not be carried far enough to produce skill.* On the other hand, the education of learning to read,—although it is an efficient process of education while in school, yet it is followed by its greatest educative effects afterwards throughout life. For the person is destined to use this knowledge of reading daily as a key by which to unlock the treasures of all human learning. The school has given him possession of the means of permanent and continuous self-education. It is the difference between a piece of baked bread which nourishes for the day and the seed corn which is the possibility of countless harvests.

TO IMPART THE ART OF SELF-EDUCATION IS THE MAIN PURPOSE OF SCHOOL INSTRUCTION.

Education that educates the child in the art of self-education is that which the aggregate experience of mankind has chosen for the school. The course of study involves the mastery of letters or the means of intercommunication with the race, the means too of preserving the harvest of observation and reflection. It moreover involves the use of letters in certain fundamental studies — so as to show the pupil how to master the great general classes of books. It initiates him into the use of mathematical book, showing him how to understand them by persistent attention and thought — showing him that memorizing the words of the arithmetic does not master the books, but that it is necessary to think out for one's self every statement and see the necessity of it. The mathematical province of letters reveals to the child the realm of man's victory over nature, because having invented mathematics it is only a question of detail — "divide and conquer" — to subdue all nature.

Then comes geography, lifting a curtain and showing the child his race divided into peoples and nations round the globe, all working at something that he himself needs, and the spectacle of the world-commerce bringing to him over all seas the desired articles.

Then there is history, lifting anothing curtain and showing the doings of man in the past. Man reveals human nature by his actions. Each one reveals to himself a small fragment of human nature, but he does not know much of human nature till he looks into history; for history reveals the higher self of man as organized in institutions. For the first time man comes to know his substantial self when he comes to study history. His little self beholds his colossal self.

Then there is literature, which shows in its prose and poetry the collisions which individuals have made with institutions — Macbeth and Othello, Paris and Helen, Œdipus and Faust. It completes for us the revelation of human nature and more than all other studies is humanizing and civilizing. The school initiates the child into this realm through the intense bursts of impassioned prose and poetry that the school readers contain, showing in these all the varieties of style to be mastered and how to master them; how to ascend from the mere colloquial vocabulary which the child brings with him from the family to the literary styles adequate to express deep thought or fine shades of emotion.

WHAT THE STUDY OF LANGUAGE MEANS.

The school also makes a study of language in itself — it teaches grammar, the most difficult of all school studies and the most educative of subtle powers of thought.

But, it is objected to me here: Does not nature give us the material of thought, and language only the symbols of thought? Is not language an arbitary symbol and nature the eternal reality? I remember saying this once myself when I was a youth in college, and the thought so oppressed my mind that I did not have patience to remain and graduate, but I left college midway in the course.

Afterwards, when I came to clear up my thoughts, I began to see that I lived in two worlds — the world of nature and the world of man. Moreover, the world of man was much more complex than that of nature, and, strange as it then seemed, the world of man was really much closer to me than the world of nature. It enwrapped me, so to speak, like a garment — a clothing for the mind. Think of nature with its two kingdoms, the organic and inorganic, and the human world with its three provinces — the realization of (1) the will; (2) of the intellect; (3) of the creative imagination. For example, there is the province of institutions with laws, and customs, and usages, national forms of government, religious systems, moral codes, political methods, etc., as the embodiment of human will, revealing the nature of human will just as the habits of ants and bees reveal ant and bee nature. If things and realities are the material of thought, what material of thought is so important for our examination as human institutional growth. Is it a product of arbitrary will? It is at least as much a reality as the habits and actions of animals and plants in which the botanist and zoologist discovers the nature of animals and plants. More than this, these laws and customs are the most dread reality that we know of. It is a matter of life and death to ignore the laws of the state — it is a matter of wasting all one's strength uselessly to disobey the behests of custom however slight. What is so close to man as his wrappage of customs and usages? This is his bond of union with his fellow men.

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*See Professor Woodward's excellent remarks on the educative limits of manual training, in his book.

If it is admitted that these products of man's will are realities and material for thought, think of their vast complexity and extent. But the products of man's intellect are the multifarious sciences and fragments of science, all his philosophic theories and all his inventions in the arts. Within this division there is the province of language — a vast complex system with a structure all its own, and yet revealing the structure of thought itself just as forms, and usages, and laws reveal the nature of the human will. And is not language a reality — is it not the material vehicle of thought, and does it not exist as an object for thought and scientific consideration? In its language lies embalmed the deepest peculiarity or idiosyncrasy of a people's growth. It is worth while to study a steamengine — an arbitrary product of man's inventive mind. Because the steam engine is the instrument for the annihilation of distance and separation. It renders intercommunication easy and cheap. It assists in producing civilization by bringing about spiritual communion. But infinitely more important to study is the structure of language, because it is the invention of the soul as a direct and adequate means of expressing its internal acts and states — its thoughts, volitions, and feelings. By language, social union and civilization are realized. To study the grammar and vocabulary of a language is to gain an insight into the structure of soul itself and at the same time to gauge the spiritual development of the people who spoke it. Even the smattering of grammar taught in schools has the great educative effect of turning the mind of the pupil inward so far as to seize definitions and classify words by the meaning that they have. It is a study of the effect which form has upon the meaning of words. Moreover, a training in grammar gives one the power to some extent of discriminating the accidental from the substantial — a training which fits the mind to enter successfully other fields of subtle thought.

The province of literature and art furnishes wonderful material of thought — for it furnishes the symbol of human ideals and aspirations, the grand impulses that move at the bottom of our civilization.

SOME CLAIMS CONCERNING THE MENTAL ACTION PRODUCED BY MANUAL TRAINING, CONSIDERED.

It has been claimed by some of its advocates that we have in manual training an executive action of the mind while we have only a receptive activity in the other school studies.

There is a distinction in psychology between efferent and afferent nerves — nerves that convey outward inpulses from the brain to the muscles, and nerves that convey impulses from the surface inward to the brain and give rise to feeling. These are named also motor nerves, and nerves of sensation — or centrifugal and centripetal nerves. This distinction between executive and receptive activities seems to be based on this difference of nerves. It would be assumed in the first place that the most essential forms of human activity are sensor and motor. The individual should be receptive of impressions from without through his nerves of sensation or else he should be executive through using his muscles. Moreover, in order to make this theory apply to manual training it must be held that manual training covers the ground of the motor, or executive. The use of the tools for wood working and mental working — such use of a portion of these tools as the manual training school furnishes is in fact supposed to be an executive training in an eminent degree. But all the metal workers in the country, according to our last census amounted to only 585,493 (counting the twenty-two important trades), out of a total number of 17,392,099 returned as engaged in gainful occupations. This is less than three and one-half per cent. of the laboring population, and yet the annual product even of this small fraction of our people exceeds the home consumption of metallic goods. The workers in wood, counting twenty-five trades, numbered only 763,814 out of the seventeen and one-half millions of laborers — about four and one-half per cent. But it is claimed that skill in the use of the tools of these trades would be valuable to all, no matter what their employments might be. This, however, is a position that cannot be maintained, for the following reasons: Every trade has its special knack or skill, and not only requires special education to fit the laborer to pursue it, but it reacts on the laborer and fixes in his bodily structure certain limitations which to a greater or less extent unfit him for other occupations. Even within the trades devoted to the transformation of metals it is found that a long apprenticeship to blacksmithing unfits one for fine work on jewelry or for engraving. Too much work at planing and sawing, moreover, would injure the skill of the wood carver. Out of the ninety-two per cent. of laborers not engaged in any form of wood or metal work, nearly five per cent. are engaged in the manufacture of textile fabrics or clothing. Counting together those who have to do with these manufactures and with the care of clothing and with leather manufactures, there are seven per cent. in all whose occupations would be more or less injured by an apprenticeship in blacksmithing and carpentry. For a certain delicacy of touch is required in the manipulation of textile material, that can be acquired only by long-continued and one-sided training. Trade and transportation employ eleven per cent. of the laborers; agriculture forty-five per cent. Manual training, if it includes only wood and metal work, fits only eight per cent. for their vocation, and more or less unfits for their vocations a large part of the remaining ninety-two per cent. of laborers.

DEFECTIVE PSYCHOLOGICAL REASONING.

But the psychology on which this distinction of executive and receptive activities is based is not sound. It omits the elaborative faculties of the mind altogether. The nerves of sensation may bring in impressions and the nerves of motion may carry impulses outward, but what connects these two activities? Physiological psychology informs us that the brain and the great ganglia at the base of the brain are used by the soul in receiving, coördinating, and comparing these impressions — in short, in thinking upon the data furnished. Moreover, before a decision is reached there must be internal impulses consulted, such as proceed from desires and wishes, and then a comparison of ideals, for one does not act in order to make a thing into what it is, because it is that already. He acts in order to change some real condition into some other condition that exists only in his mind as an ideal possibility. The purpose or ideal being fixed, and the means of realizing it being chosen, the will acts and the motor nerves are called into use to set the limbs in motion or to utter words of command. That the ordinary branches of instruction in school relate to this function of elaboration of data into plans of action far more than they relate to the mere reception of sense-impressions or to the exercise of the motor nerves, is obvious. It is obvious, moreover, that in the perfection of this function of elaboration lies the culture of true directive power. The general who plans the battle and directs the movement of his troops so that they secure victory is of course the executive man in a far higher sense than the private soldier who mechanically obeys what he is ordered to do. The general may use his motor nerves only in issuing the words of command, while the private soldier may exert to the utmost every muscle in his body — yet the real executive is the general.

RELATIVE RANK IN VALUE OF EMPLOYMENTS SHOULD NOT BE IGNORED.— THE TRUE FIELD OF USEFULNESS OF THE MANUAL TRAINING SCHOOLS DEFINED.

It is not desirable that children shall be taught that rough hand labor is in itself as honorable as the elaborative toil of thought which gives rational direction to the hand. The best function of the manual training school is its training of the elaborate faculties of the mind — its studies on the rationale of the construction and use of tools — its study of mathematics and science. This points out the road of permanent usefulness for such schools. They may fit master workmen for the several trades and occupations and thereby furnish overseers who not only can direct but can teach besides.*

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*It is sometimes claimed that the educative effect of the manual training school is the remedy for a prevailing distaste for manual labor. Professor Woodward phrases it "the overcoming a most humiliating repugnance on the part of so-called educated people to using their hands." To this it may be said, that if it is the object of the manual training school to cure dudes of their contempt for honest labor, it should first get some compulsory system of attendance for that class of the community. Professor Woodward declares that "The manual training school is not an asylum for the lazy." Indeed, his entrance examinations carefully sift out all boys who do not give evidence of past industry and good habits — in short, all boys who are not already in love with honest hand work. If the object of the school is to fit ordinary boys for the trades and cure them of aspiration for clerkships and pro-

It is evident that the elaborative function of the mind is the true source of executive power. The problems of life must be solved by thought before they can be reduced to action without waste of energy.

THE COMPREHENSIVE EDUCATIVE AND ECONOMIC VALUE OF THE ÆSTHETIC TRAINING RECEIVED THROUGH DRAWING PROPERLY TAUGHT.

There is one phase of the psychology of manual training which deserves special commentary. Æsthetic training through drawing properly taught gives an educative effect of a far-reaching character as respects all of our industries. In it is also contained the solution of the economic problems that lie deep down under the manual training questions here considered.

By proper instruction in drawing one must mean the cultivation of the hand and eye by the use of the pencil — but this is only the first and least important part — it is more manual and less mental than the second requisite which is an instruction in the ideals of tasteful and decorative form which should be taught in parallel lessons in connection with the practical use of the pencil.

Once trained to recognize the beautiful and graceful in form and arrangement and to criticise all defects in this particular, the pupil has acquired a precious quality of mind useful in every occupation and in every station in life, whether subaltern or directive. Culture in taste, such as drawing gives, fits all laborers for more lucrative stations and helps our industries by giving our commerce a firm hold on the markets of the world. Not merely wood and metal work profits by this cultivation in taste, but all manufactures, whether of food, clothing, or shelter.

The educative effect of art is also ennobling, for it leads to the preference of an ideal which is not a selfish one.

LACK OF ART TRAINING A SERIOUS DEFECT OF THE SLÖJD METHODS.

If we could see in the Slöjd training a more prominent place offered to art studies* we could predict with some certainty the rise of Sweden from the low rank she holds among manufacturing nations. Instead of furnishing raw material to other nations — she sends us pig and scrap iron, and rags † — she would begin to send out finished goods, as Belgium and France have sent out for a long time, and as England has sent out since the foundation of the South Kensington Museum.

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fessional work, the statistics show an alarming influence in another direction. In the Chicago Manual Training school, out of the eighty-seven graduates in the three years, 1886, '87, '88, there were fifty-one at least who are reported as looking higher than manual labor, namely: four teachers, twenty-eight students in higher institutions, seven entering the professional work of architect or engineer, and twelve clerks, while only twenty-five appear to be engaged in manual work, either as overseers or workmen. Of the one hundred graduates of the St. Louis Manual Training school in the years 1883, '84, and '85, it appears that sixty-five look above manual labor (six teachers, twenty-nine students in higher institutions, twenty-one clerks, nine professionals), while only twenty-five are reported as engaged in work of farming and mechanical pursuits as laborers or overseers.

* In the Slöjd work it is stated that the chief tool used is the jack-knife, though it is the object of the training schools of Sweden to secure skill in the use of other tools. The political economist cannot commend the encouragement of home manfacture of knick-knacks, though he may admit that it is better than sheer idleness during the winter months. Far better would be the introduction of manufactures requiring skilled and combined labor that would draw the peasants into villages, as our own manufacturing establishments have done. To some extent work can be given out by the large manufacturers to the families of the rural population, as for example, as is done here with the manufacture of clothing,— and such work is found far more profitable than knick-knacks, especially when the latter are not made of graceful patterns, or from tasteful designs.

† In the official report of Commerce and Navigation of the United States for 1881, the imports from Sweden and Norway are reported as pig iron, $111,176; bar iron, $517,959; old and scrap iron, $114,883. Total, $744,018. But of manufactuers of iron and steel, only $111.749 are reported. It is surprising to note that we imported wood manufactures from them only to the small amount of $137, while we imported rags for paper manufacture to the amount of $39,090, but no manufactured clothing to speak of! The same year Belgium sent us wood manufactures to the value of $118.146. or nearly one thousand times the value of the same item from

8, 79.)

However this may be, it is pleasant to record the fact that American manual training schools give far more attention to the study of drawing, although perhaps not enough to the analysis and discussion of the forms of ornament and free design, or in other words to the theory of art.

Whether manual training schools shall develop into industrial schools for the training of apprentices to the several trades, or, on the other hand become incorporated into the school system as a general discipline, depends of course, upon the answer which Educational Psychology finally gives to the question.

XII.

INDUSTRIAL EDUCATION AS A PART OF THE COMMON SCHOOL COURSE.

By A. P. Marble, esq.

INTRODUCTION.

In questions relating to a proposed new departure in the management and studies of the common schools, it is proper that all phases of the discussion should be here presented. With this intent the following extracts from a paper read before the New England Association of School Superintendents in Boston May 29, 1885, by A. P. Marble, Esq., the able Superintendent of the City Schools of Worcester, Massachusetts, are given.

This paper, since published, is entitled "Industrial Education as a part of the Common School course." In it some of the arguments urged by zealous friends of the Manual Training movement are combatted in the trenchant manner characteristic of this well-known educator, who has always shown the courage of his convictions.

It will be observed that, though opposing the idea of "basement workshops," Superintendent Marble believes fully in the value of the study of industrial art drawing, and that he also believes in Technical Schools. The latter to be undertaken by private enterprise until their success has been so fully demonstrated as to justify their adoption by the public. So that the difference, as he states it, practically narrows down to the question of what it is wise to teach boys under 14 years of age, and is wholly a question of expediency.

With much that he says about the various schemes for piling all sorts of reformatory theories upon the public schools, many of the most earnest advocates for Manual Training will heartily concur; while a somewhat general disposition to throw off upon the schools all responsibility for the training of children, is one that can hardly be too severely condemned. He says:

The clamor for industrial education as an "annex" to the public schools has now been heard, off and on, for about a dozen years. * * * It may be known to some of you that I have none of the itching for this annex which has disturbed some of our friends. The demand for manual training does not come from the people for whose children the training is designed; it comes chiefly from a class of self-constituted philanthropists who are intent upon providing for the "masses" an education which shall fit them for their "spheres." And the aim of industrial education is not well defined by its advocates. On the one hand, we are told that such training is necessary in order to develop the muscles of the hand and other parts of the body, that is, industrial education is a sort of gymnastics. On the other hand, it is claimed that manual training is required as part of the common school system, in order that pupils may learn the rudiments of a trade or trades. And again it is asserted by the advocates of industrial education that such training is a necessary part of a complete education. The defenders of the manual training annexes have shown great facility, when dislodged from one of these positions, in transferring their base to another — whichever they first select — and in finally coming back to the first position, if necessary. The only mode of attacking them is with a kind of Gatling gun which sweeps the whole field at once.

It is true, no doubt, that education in its widest meaning does include the complete and harmonious development of all the human powers, the physical, the intellectual and the moral. But who has ever been educated in this wide sense? Not even the colleges pretend to secure such an education. It is the work of a lifetime, and it is never attained. Underlying the discussions, by the self-appointed critics of the public schools, not only respecting this question, but concerning numerous other phases of the alleged short-comings of these schools, there is the preposterous assumption that they aim, or should aim, at education in this all-comprehensive sense of the term. What the best colleges do not attempt, should not, however, be admitted to be the function of the public schools. * * * .

TO TRAIN THE INTELLECT THE FIRST OBJECT OF PUBLIC SCHOOLS.

The public school is primarily a place for intellectual training, and incidentally for moral and physical training. In its moral teaching it is confined to the general principles of morality and virtue; it can not teach religion specifically. Nor does it follow because we have a threefold nature — moral, intellectual and physical — that the catechism must be taught in the same school and at the same time with the arithmetic, nor that the use of the hammer must be taught at the same time and in the same school with the grammar. * * * .

THE VAGARIES OF THEORETICAL EDUCATIONAL REFORMERS.

It would be amusing, if it were not sad, to notice what throngs of schemes are proposed to improve society by some novel attachment to the schools, which already have more to do than they can accomplish. Recently it has been proposed to inaugurate a system of savings banks, where pupils may deposit their small earnings, and thus acquire habits of frugality — every teacher to become the cashier! Scientific temperance is now before the legislature, and the effect of alcohol upon the human system is to be explained by every teacher in the land, according to a theory which may or may not have been demonstrated, as if that could be a bar to intemperance. There is a wide field still open for the ambitious; for the catalogue of virtues to be cultivated and vices to be shunned is by no means exhausted. Why not show, scientifically, to all public school children, the evil effects upon the social system and upon private character of lying, of theft; and physiologically, of want of chastity, of opium, tea, coffee, tobacco, etc.? It may well be doubted whether a knowledge that drunkenness, or any other vice, is harmful, restrains any one from the gratification of a passion. The wise authors of our constitution have left the duty of "public schools and grammar schools in the towns" about where it belongs: "to countenance and inculcate the principles of humanity and general benevolence public and private charity, industry and frugality, honesty and punctuality in their dealings; sincerity, good humor and all social affections, and generous sentiments among the people."

If under this clause teachers will not do their duty, it is very doubtful whether special laws for the cultivation of particular virtues will accomplish more.

WHAT PURPOSE IS TO BE GAINED BY TEACHING CARPENTRY?

To take up more directly, now, the question at issue: If industrial education is not necessary to give completeness and symmetry to common school education, it remains for us to inquire whether such training should be introduced to secure dexterity or a knowledge of the trades for the pupils. For a flood of light on this subject we are indebted to this very city of Boston in which we meet. The recent experiments here have attracted so much attention and awakened such interest, that a few of us have hardly been able to resist the temptation to experiment too, in the same line. The Commercial Bulletin has recently published an account of one of the most interesting experiments in manual training in the public schools of Boston — a carpenter shop in the basement of the Latin school building on Warren avenue. This report, deriving as it does the facts and statistics from the teacher of the shop, is all the more valuable because it is made by an outsider, in no way connected with the school; and it is a kind of public judgment in the case. It appears

First — "That fully one-third of the pupils are the sons of wealthy parents." It is safe to assume that half of the rest are not sons of carpenters or other mechanics; and hence we may conclude that the demand for this kind of training has not come from that class of people — it comes from the philanthropists, as said above.

Second — "It is not wise to experiment in this kind of training with boys under 14 years of age, since the work would be too hard for them." Boys 14 years of age are in the highest grammar and the high schools. Here then, at a single stroke, industrial education, so far as it is conducted in the carpenter shop annexes, is removed from more than ninety per cent. of all the public schools, whether the purpose of this kind of education be muscular training or the knowledge of trades. * * *

Third — "After the first three or four lessons it is impossible to keep grades of work uniform, owing to the difference in the mechanical ability of the pupils." It thus appears that the teaching of the trades in these schools must be done with the pupils, individually. * * *.

Fourth — "Instructor Smith was of opinion, also, that not more than one in 25 of the pupils could become carpenters." That is to say, of 200 boys in this school, there were eight who gave promise of becoming carpenters. Supposing the yearly cost, including instruction, lumber, the use of shop, tools, etc., to be $8000, it has cost $1000, not to train a carpenter, but to show that a boy may become one. This would be discouraging to an ordinary man; but one mounted upon the industrial-educational hobby, of the carpenter-shop variety, is undaunted still. We must not forget, however, that Mr. Smith hired 16 alleged carpenters to work for him and found only two good workmen among them; but the public schools should not turn out so small a per cent. of competent men. To do so would add another *casus belli* in the crusade against them.

CONFUSION IN STATEMENTS OF ITS PURPOSE BY ADVOCATES OF MANUAL TRAINING.

Fifth — "It is evident, however, that the purpose of a manual training school of this sort is not to teach a particular trade, but rather to familiarize the boys with the general use of tools and to increase their respect for manual labor." Here we have a most important result of that valuable experiment, to wit: That the purpose of such a school is "evidently not to teach a particular trade." It was shown, just a little back, that the purpose could not be mere dexterity, since only a small per cent. of common school pupils can profit by it, but by a very skillful little change of base we find that the object now is "rather to familiarize the boys with the general use of tools and to increase their respect for manual labor." How a boy's respect for manual labor is to be increased, by a somewhat promiscuous and a very limited use of the hammer, the saw, the plane, and the chisel, I leave some one else to show; and while he is about it he may also explain how a "general use of tools" can be learned from these few.

Sixth—"The pupils are invariably interested in their work." The same would be true of the game of "hockey," or of roller skating.

From the considerations thus far presented, it seems to me that the shop attachments to the public schools are not the best means of securing industrial education, whether the purpose be to give mere dexterity, or to teach a trade or trades, or to provide a complete and symmetrical education. It appears to me that, while recognizing the necessity of a threefold development, so far as possible — the intellectual, the moral and physical — we may yet hold the schools mainly to their proper sphere, a systematic intellectual culture; and at the same time, incidentally, and without any formal system, these schools may and ought to do a great deal in the way of moral training and physical training, or industrial education.

The scheme of moral training has been, for the present purpose, sufficiently outlined above, in the reference to the constitution of Massachusetts, which is followed, I judge, far more closely than we advertise.

VALUE OF DRAWING IN INDUSTRIAL EDUCATION.

Industrial education is already provided for to the best possible extent with a single study, in the present teaching of drawing. This study trains the eye to see form and size; it trains the hand to delineate and represent form, and it directly tends to the industrial pursuits. In a recent exhibition of drawings from the schools of a city of this state, some architectural drawings fell under the eye of a large contractor and builder. He remarked that the boy who made them had more than half learned the carpenter's trade — a result from a general training, useful in many ways, far more satisfactory than the special training of the shop, even in the line of the shop work. And at the same exhibition the work in design fell under the eye of the agent of a mill for manufacturing prints, where a foreign designer is employed at a salary of $10,000 per year. The agent said the design from the school gave evidence of ability in the pupil to do this kind of work in the mill. These instances are cited to show what we already do for industrial education, for which the schools have too little credit.

PRACTICAL SUGGESTIONS AS TO INDUSTRIAL TRAINING IN SCHOOLS.

Having now, so far as I am able in a brief time, demolished the shop-in-the-basement plan through the experiments so far made, having also tried to indicate the limitations of public school responsibility and public school aims, and having also hinted at what these schools are already accomplishing in the study of drawing, it remains for me to point out in what way industrial education may be still further advanced; and for this three means are proposed:

First—To secure dexterity.

Second—To awaken interest in mechanical and other industries.

Third—To anticipate a little in special schools the learning of trades.

And first, it must be assumed that children have the use of their limbs when they come to school. They must walk to school for instance, and this is a great feat. Nothing equal to it is learned afterwards. Think of the nice adjustment and the complex mechanism of the body in play when a boy balances himself on his feet and steps. And what a pity that all this has been done without the aid of the schools! Will not some one propose the scientific study of locomotion as a branch of common school study? No less wonderful is the knowledge which children have of the use of the hand. How they will put to shame older people in playing jack-stones, and marbles! It is an error to assume that children have not the use of their hands and feet to a very large extent.

EDUCATIONAL VALUE OF GAMES AND PLEASING OUTDOOR EXERCISES.

Now the wise teacher may supplement and enlarge this knowledge, as an indirect part of the school work, just as he teaches morals. But each should do it in his own way, and not by any arbitrary system. Boys and girls take to games requiring muscular activity, just as naturally as ducks take to water. Every teacher has been, or should have been, a boy or a girl. Let him take an interest in and promote active sports and games. The pupils will be "interested;" they will study all the better for it. The teacher should be able also to *introduce* games requiring physical skill and activity. The simple exercise of tossing bean bags or rubber balls about a school room is worth more, for girls, than any other one form of gymnastics. Lawn tennis is fine exercise, and dancing has its advantages. And for the boys, base ball — how it trains not only the hand, but the eye, and the feet, and every muscle of the body, almost! I refer to the simple old-fashioned games where all the boys play, and not to the modern scientific game by proxy, where the "nine" take the exercise, vicariously, and the majority tire the benches. Arboriculture in spring, botanical excursions in summer, skating under the clear sky in winter and tobogganing are forms of exercise for boys that train muscles, and give, each in its way, dexterity, while they are also conducive to health and exuberance of spirits. And fortunately in this country the woods and fields are accessible, by hook or by crook, to all boys and girls.

Furthermore every teacher has, or should have, a knack at something which requires the skillful use of the hand. One is deft at needle-work in some one of its many forms: one may be able to carve with the knife, an accomplishment which boys in our day were skilled in, and from which the modern boy is much restrained; another can handle carpenter's tools; another can paint, and others can mount birds, prepare specimens in zoology, analyze plants, arrange cabinets of minerals, or insects, or fishes. In short the whole field of natural history studies is open for them. The movements towards these studies in our schools, notably in the lectures before teachers' conventions, and in the preparation of elementary text-books of late, are most encouraging; the field is far more promising than carpenter shops; its fruitage is a broad culture, and its methods of study are likely to be the best. * * * .

Secondly—It is far more important to create in school an interest in the mechanical industries than it is to give the pupils a little skill in any one of them. The wonderful prosperity of this country has sprung from her inventions and her mercantile and manufacturing industries. * * * .

Thirdly—The learning of trades. The apprentice system has fallen into disuse, owing to the introduction of machinery into almost every kind of work, and to the consequent division and minute sub-division of labor. * * * .

TECHNICAL SCHOOLS DESIRABLE.

When the need of skilled labor was felt in France, technical schools sprang into life; and from the success of these it has been falsely argued that technical or industrial education should be attached to the public schools. In this country technical schools of the college grade have already been organized, with marked success. The Institute of Technology in Boston, the Technical Institute at Worcester, the Troy Polytechnic School, and the Stevens Institute at Hoboken, are notable instances. What the schools of France exemplify, and, whenever there is a public demand from the people interested, what we need is, special industrial schools of a grade corresponding to the grammar schools, as the technical schools correspond in grade to the colleges, schools where the rudiments of a trade or trades may be learned by an ambitious boy during a part of each day, while he is attending school. By devoting part of each day to study, and part to learning a trade in these special schools, the two might be carried on together, with mutual advantage "with boys not under 14 years of age." With younger boys no such attempt should be made. With special schools of this sort the public school authorities have no business to experiment. The experimental stage of any branch of business ought to be left to private enterprise. Factories, patents, railroads, and tunnels have never been successfully managed under government control, in this country. Our institutions are not adapted to it.

After special schools of this sort shall have been established upon well-defined principles, and after the public demand for them becomes apparent, then they will become a part of the public school system as naturally and as easily as the high school, or as drawing, or any other branch of study. * * * .

CONCLUSIONS STATED.

In closing let me briefly restate my position.

I. The common schools have a sphere of their own; and it does not include shops-in-the-basement.

II. Industrial education, in the best possible form, is a part of the course,—in the study of drawing.

III. Incidentally, and in any line for which he is fitted, every teacher should secure a certain manual dexterity.

IV. The best means of securing an industrial education is the systematic, but not formal study of local industries.

V. For teaching trades, special schools should be experimented with by private enterprise; they should be supported by the public school authorities only after their practicability and usefulness shall have been established, and in response to a real public demand.

XIII.

THE NEW EDUCATIONAL METHODS CRITICISED BY AN EXPERIENCED EDUCATOR.

INTRODUCTION.

No cause which rests on solid foundations need to fear any honest criticism. Educators have been the severest of critics of educational methods. While this is as it should be, it has one resulting annoyance; namely, that people who are not educators, who do not know the relative value of the methods criticised, are always ready to take up and adopt the criticism of a particular method, or of a recognized experiment in teaching, as if it was a comprehensive condemnation of the whole system of common schools; whereas, the critic, whose verdict of disapprobation they enthusiastically accept and reiterate *ad nauseam,* is a stalwart supporter of the system, and is only criticising some technical detail with no purpose or idea that his words will be made use of as against the common schools themselves.

It is well that every new educational idea, every new plan which involves either a change in the ideal of education, or a revolution in methods of teaching, should run the gauntlet of criticism, should be attacked from every side; for, if it is not able to stand this test of severest scrutiny it has no right of existence.

It is well, too, to remember that each generation of men contribute but a very slight increment to the sum of human knowledge, or to the experience of the race. A new idea in education is made known and taken up;—to believe the enthusiastic advocates of the movement,—the world till now has been languishing for lack of this new discovery! Yet, somehow, the achievements of the crowding generations have failed to dim the brilliancy of the ages of Pericles, of Augustus, of Elizabeth. While, if we turn from literature, arms, and art, to the works of men's hands; the mighty ruins that still remain of the desolate cities of the Orient; the enduring majesty of the Pyramids; the immortal beauty that enshrines the ruins of Grecian Temple and Roman Forum; the challenge given by "Peter's Dome" and "Giotto's Tower," each and all, proclaim the pre-eminence of the mighty masters who raised these great monuments, and we look in vain for their modern rivals.

This thought may well give us pause, may serve to check the exuberant enthusiasm of the disciples of the new faith, and to moderate the contemptuous expression of youthful disrespect for the world's outworn creeds!

Much has been told of the wondrous advance evidenced by the founding of the New Women's Colleges; as if no woman in America was ever educated before Vassar, Wellesly, and Smith, were ushered in with much blowing of trumpets!

It chanced to the writer once to witness for a few days the contact of an educated gentlewoman, carefully trained in the days before the first "Woman's College" had been christened, with a bevy of bright, enthusiastic college girls, whose daily talk was of their studies, "Psychology," "Physics," *et id omne genus;* and, at first, her wonder was, like that of Goldsmith's rustics at the teacher gauger, that such small heads could carry all they knew.

After a while, however, it dawned upon her that "Psychology" was only her once familiar friend "Mental Philosophy" masquerading under a new name; and that "Physics" was but "Natural Philosophy," in which she herself had been thoroughly drilled by the most famous Professor of the Science! Subsequent talks with the budding girl metaphysicians and scientists about her, soon convinced her that the sweet girl graduates of the day were not so much more profound and learned than their mothers had been, as they evidently supposed themselves to be; and as, at first, deceived by the sonorous phraseology of the new names for the old studies, she herself had been inclined to admit.

With all their expressed contempt for "words" in contrast with their exalted estimate of "things," the ardent advocates of the "new education" evince by their rechristening of the old familiar studies, as set forth by Mr. Missimer in the following pages under the head of "Baby Talk," a very clear comprehension of the important influence of language, of words, by this coining of terms, which by their unfamiliar appellations would naturally lead one, used only to the old fashioned words, Geography, Arithmetic, Grammar, Reading, etc., to imagine that whole provinces of hitherto undiscovered knowledge had been added to the domain of Education, and that these enthusiasts were brave discoverers of new truths; just as, in the instance recited, the college girls were, for a little, supposed to be the enviable disciples of a New Academy! It may be urged, in reply, that the wonderful advance during the last two decades, in the applications of science, has really opened new fields of knowledge and developed new branches of study, with a new terminology invented for the new needs—new names for new things, which must be mastered by students of science, all of which is unquestioned; these instances are, however, wholly irrelevant, since it is only the use of new names for the old familiar studies which is here referred to.

In the rapid spread of the Manual Training movement, as set forth by some of its most enthusiastic advocates, the idea that to become a carpenter, or a blacksmith, with a modicum of training in elementary English studies, ought to be the highest ambition of the ordinary American boy, seems to be imminent.

Such were not the ideals of the Elder Republics.

It is well in this age in which the tendency to materialism is so strong, to question whether it is wise to turn all the training of the schools in the same direction.

It sometimes seems, in considering all the materials brought into the school room as necessary implements of instruction, that the very idea of the directive energy of the mental faculties, of the leadership of the mind, has been degraded; for, from the multiplicity of these helps now considered so essential, it might almost be inferred that the power of abstract thought, of purely mental conception, had been lost.

In the following article, written by a teacher of long experience, the new theories are frankly discussed and certain modern tendencies which seem just now to be dangerously contagious are cleverly delineated. Where so large a space as is given in this volume to the setting forth the new methods by their enthusiastic advocates has been accorded; it is only just that such criticisms as experienced educators feel impelled to make should also be given. In inserting the preceding article by Superintendent Marble, and the present article by Principal Missimer, it is believed that a valuable contribution is made to the discussion by thus placing in the hands of the earnest student the varying views of distinguished educators for comparison and contrast.

Principal Missimer stands as representing the classical Academy idea which was the model of the early public High Schools. In the juxtaposition of the arguments of advocates and critics to be found in this Appendix many of the discrepancies between them will be seen to arise from a misapprehension of each other's positions, and so be readily corrected by the reader. It is possible that when these errors are all eliminated the different classes of educators will be found to be standing not so far apart but that their ranks can readily be joined in defence of the Common Schools themselves.

The following is the article referred to, which appeared in a recent number of a leading Educational Magazine.*

WHICH IDEAL?

BY H. C. MISSIMER, PRINCIPAL OF HIGH SCHOOL, ERIE, PA.

Plato, in his "Republic," puts into the mouth of Socrates the following noble words:—"Citizens—You are brothers, yet God has framed you differently; some of you have the power of command, and these he has composed of gold, wherefore also, they have the greatest honor; others of silver, to be auxiliaries; others again, who are to be husbandmen and craftsmen, he has made of brass and iron; and the species will generally be preserved in the children. But as you are of the same original family, a golden parent will sometimes have a silver son, or a silver parent a golden son. And God proclaims to the rulers, as a first principle, that before all they should watch over their offspring, and see what elements mingle with their nature; for, if a son of a golden or silver parent has an admixture of brass and iron, then nature orders a transposition of ranks, and the eye of the ruler must not be pitiful towards his child because he has to descend in the scale and become a husbandman or artisan; just as there may be others sprung from the artisan class, who are raised to honor, and become guardians and auxiliaries. For an oracle says that when a man of brass or iron guards the state, it will then be destroyed."

Two thousand years and more have passed away since these wise words were written, and yet the gnawing tooth of time, which eats away empires, dynasties, and all things human, has been powerless against their eternal truth. They proclaim in clear and unmistakable language the whole duty of the state in education, and the reasons therefor. Recognizing the common brotherhood of all men, they remind us that God, none the less, has framed us all differently with such differences of nature that we are as distinct, the one from the other, as gold from silver, or brass from iron. They enjoin our rulers to "watch over their offspring and see what elements mingle with their nature," so that the son of the golden or silver, the brass or iron parent may be discovered, and come into his proper place in life. For "when a man of brass or iron guards the state, it will then be destroyed."

Truth is indeed eternal! As it was in the days of Plato, so is it now. In a government in which my neighbor and myself, each and all, are parts of the governing power, electors to-day, officers of state, a possible governor, or president to-morrow, it becomes the positive duty of the state, for its own protection and perpetuation, so to educate all, that each may know what he is fitted for, and that those who are competent to fill the higher positions of life may be discovered. Educate, and the men of gold and silver will certainly rise to the top, no matter what their rank in society, while the men of brass or iron, in spite of the artificial props of wealth or family influence, will, by a law as sure as that of gravitation, sink to the bottom. Without the education sufficient to enable each citizen to comprehend his moral and civic duties, government by the people would soon come to an end, from the lack of the intelligence necessary to carry it on.

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* "The Academy: A Journal of Secondary Education, issued monthly under the auspices of the Associated Academic Principals of the State of New York. March, 1889. George A. Bacon Publisher, Syracuse, N. Y."

WHAT SHALL BE THE STANDARD OF AMERICAN EDUCATION?

Education, therefore, we must have, but of what sort? Shall it be adjusted to the purely utilitarian standard, and of the earth, earthy? *Post nummos virtus*—money first, virtue second? Or, shall it make the development of the mind and soul the first consideration, and the preparation for securing the physical comforts of life the second? Shall it be the standard of the man of silver and gold—*Post virtutem nummi*—virtue first, money second?

This much is certain. If public school education is to be adjusted to the industrial needs of the masses, higher public school education will go by the board. "The sifting out, from the masses of ordinary and inferior capacities, of those who are competent to increase the general welfare" and properly administer government by the people, will have to be left to individual and private enterprise. The governing class will come from the rich, because the poor will have his only chance of preferment taken away from him. Industrial education for the masses—training for the hand—is demanded on three general grounds:

First, the bread-and-butter problem being the great question of life for the majority, it is the duty of the state, if it be organized on the principle of the greatest good to the greatest number, to make the chief work of the public school that of training the great bread-winner—the hand.

Secondly, manual training teaches the lesson of the dignity of labor, and creates a love for that kind of work which must be the lot of the great mass.

Thirdly, skill of the hand quickens mental activity, strengthens the mind, and produces a stronger, all-round man than training of the mind alone.

All three positions are unsound. We call it socialism when men, in their selfishness, laziness, and want of enterprise, ask the government to provide them with work and the means of living. Why is it not, equally, educational socialism to ask the state to go into the business of instructing its children for apprenticeship to the trades in order to help them to something to do, instead of promoting individual enterprise by educating them into the habits which shall enable them to find work for themselves?

THE TRUE PURPOSE OF THE PUBLIC SCHOOL.

The first and proper business of the public school, before the preparation for any calling, trade, profession or hand-work, is to find out the differences of nature and capacity that exist in children, to discover their individual aptitudes—to distinguish the capacities of gold and silver from those of brass and iron. The discipline derived from the study of reading, writing, arithmetic, spelling, grammar, the history and geography of our country, will reveal these differences and aptitudes; and until these elements of learning are gained, until the special bent of the pupil is known and developed, and the key to the door of knowledge and success thus put into the hands of every boy and girl—any manual training that looks to the learning of a trade is out of place.

This part of education should be well done. In most of our public schools it takes from six to fourteen, and in some, even to sixteen years, to get a fair knowledge of the elementary branches. Seven years, at the most, should be all that is necessary. But unfortunately the public school has quartered upon it, at present, a cohort of afflictions in the shape of senseless crazes which distract attention from its proper business, are no part of its real work, and dissipate and waste its strength.

EDUCATIONAL FADS.

A partial enumeration of these crazes is, to say the least, highly edifying. There is the "method" craze, which has taken such hold of the entire system, that, from the primary to the high school, the teaching consists mostly of the application of the theories and methods of hobby-riding pedagogic philosophers, to the exclusion of common sense and individual thinking, which, when joined with a thorough knowledge of the subject to be taught, and a proper comprehension of the varying capacities of children, are the chief qualities of really successful teaching. Then come the "object lesson" craze, with its over-elaboration in teaching simple things.

and its manipulation of splints, blocks, beans, shoe-pegs, corn, stones, marbles, etc., in learning how to add, subtract, multiply, divide; the "illustration" craze, requiring that every new idea or word must be represented by an object, or by a picture on the board, calling for importation into the school room of all sorts of things, or pictures, ranging from a mouse to an elephant, from a key to a house, from a doll to a man,— as if the very end of education were not to enable the mind to conceive of a thing without the aid of the material object. Then come the "memory-gem" craze, proposing to inculcate a love for literature on the same principle as the Sunday School seeks to create a love for the Bible by the committal of verses; the "civics" craze, calling upon children of eight to ten for information about custom-houses, post-offices, city councils, officers, governors and legislators; the "substance" craze, by which children of even eight years are supposed to learn that substances are classified into animal, vegetable and mineral substances, and that matter is organized or unorganized. Then come the "story-telling" craze, the "phonics" craze, the "word-method" craze, the "drawing" craze, with its multiplicity of drawing books, the "music" craze, calling upon children for original composition in music, and diverting into a task what should be only a means of recreation and rest from regular school work. Then there are the "letter and business-form" crazes, the "botanizing" craze, with oral lessons on the apple, pear, peach, grape, orange, etc., the "picture study" craze, the "zoology," "form," "color," "physics" and "mental" crazes, the "prefix, suffix and root" craze, the "declamation and recitation" craze, and so on, *ad infinitum et ad nauseam.*

"BABY TALK."

Even the very branches of the old-fashioned school days are now sweetened (?) to the mental appetite by titles that savor strongly of Mother Goose and the days of baby-talk. Arithmetic is now "number work"; geography, "place lessons"; grammar, "language lessons," or "ear culture"; spelling, "talking with a pencil"; reading, "what-does-the-story-say," "sentence picturing," or "talking through the eye-gate." The road to knowledge is no longer rocky and uneven, it is "boulevarded in the highest style of the art." In short, the whole art of teaching in the public school is the art of "wheedling children into knowledge without their knowing it," bringing everything ready-made to the mind, sugar-coating every difficulty, turning the teacher into a variety show of "sounding brass and tinkling cymbal," and pleasing the child with a rattle, or tickling him with a splint.

The psychologizing philosophers who are responsible for such stuff in the public schools, ought to learn at once that the human brain works also out of school, and that many things now taught (?) therein are sure to be learned by the education of the home, the street, the play-ground, by association, and by contact with men and outside things. To spend time over matters in school, which, when school gives the right habits of work, are sure to be learned out of school, is sheer folly, a frittering of energy, an utter waste of time.

These men of hobbies ought also to know that "when the principle of making easy and interesting is pushed to the length of not requiring pupils to learn anything but what has been made easy and interesting, one of the chief objects of education is sacrificed." And furthermore, "The new system of teaching, as it seems to me," says the same high authority, "is training up a race of men who will be incapable of doing anything which will be disagreeable to them." The sooner such methods are swept out of the schools, the sooner will the latter regain their place in the public regard and confidence. Let them concentrate their energies in the lower grades on the common English branches, and do that part of their work well, and the chatter about manual training for our boys and girls will soon grow less, and the business "college" will soon grow smaller in the land.

THE RESULTS OF SOUND INSTRUCTION IN PRIMARY GRADES.

The right kind of instruction in the elementary branches will leave no time for anything else in the lower grades of the public schools. In the higher grades, which pupils should reach at the age of thirteen or fourteen at least, belongs the instruction in higher English, languages, mathematics, civics and morals; because these subjects can be properly comprehended and understood only at the age of intellectual consciousness, and with the unfolding of the reasoning faculties. Even though the great majority of children leave school before the age of thirteen, these grades are none the less valuable to the State, because they have to do with the training in those very matters which are necessary to the proper comprehension of the duties of the citizen, and to the exercise of the more important functions of government, Moreover, if morality be the best guarantee of national stability, what part of the public school system can be more important to the State than that in which moral instruction is given during the period of dawning manhood and womanhood, when the character is settling into its life grooves? No policy could be more fatal to the commonwealth than to cut off this part of the public school system — sixty to eighty per cent. of whose pupils are children of the laboring poor — and to put in its place manual training schools. Such action would take, as has been said, from the poor child his only chance of obtaining the knowledge necessary to the enjoyment of the higher privileges and honors of citizenship, and would condemn him to serve forever among the hewers of wood and the drawers of water.

STATE APPRENTICE SCHOOLS.

If the State must enter into the business of apprentice-making by establishing schools for training the hand, let those only be required to receive such training whose work in the public schools shows that they have a bent for hand-work. To such only can manual training be beneficial. But why put them into a manual training school at all? Why not, after the question of fitness is decided, put them at once to the trades and callings they are individually fit for? The manual training school proposes to give only skill to the hand. Can not each get that as well, and with a saving of time, if he learn his trade in the shop, instead of the schoolroom? Let the State start special trade schools at once, and turn out directly our masons, carpenters, butchers, bakers, blacksmiths and all of our other artisans. *Aut illud, aut nihil.*

It is true that the great mass of children in our schools are destined by nature for work with the hand. That is their lot, and they will come to it, with or without industrial training, which can only advance them on the road. But because the problem of life for so many will be that of bread and butter, that does not release the State from the obligation of educating those who are fit for the fulfillment of the higher duties of citizenship and for the higher positions of life. These are of as much importance to the community as the lower ones; both are necessary to the public welfare. It is the business of the public school to prepare for both. That ninety-five per cent. of the inmates of our penitentiaries should be without trades, and that more than half of these tradeless criminals receive public school education is no argument against the inadequacy of the public schools. The records also show that ninety-six per cent. of these public school criminals leave school in the primary grades, between the ages of six and thirteen, before that part of public school education, of the most influence in moulding the character and establishing habits of work, is reached.

THE IDEA OF DIGNITY IN LABOR THE RESULT OF MENTAL CULTURE, NOT OF MANUAL TRAINING.

The second claim for manual training, that it teaches the lesson of the dignity of labor, and creates a love for that kind of work which is the destined lot of the great mass, is equally indefensible.

The truth is, the idea that there is dignity in labor only comes with the broadening and deepening of the mind by mental culture. Work is success, and success is work; *that* is the lesson which education is ever imparting. If manual training create a love for manual work, should not the farmer, and the farmer's son, stick to the farm, the shoemaker to his bench, and the mechanic to his shop? Education clothes an occupation, however humble, with dignity, by first teaching the lesson that persistence and the right doing of work insure honor and success in any occupation. To be able to read the Iliad, scan Virgil, to know how to demonstrate the theorems of Euclid, or even to spell well, do not make a mechanic, a shoemaker, or a farmer, but they will enable the mechanic, the shoemaker or the farmer to be a better mechanic, a better shoemaker, and a better farmer.

Right education, too, reconciles the mind to that lot in life into which circumstances may bring us, or to which our natural capacity adapts us. Is it not, therefore, more important for those who will have to live by manual labor to learn first, through education, their mental measure and fitness, than to be trained for a life of manual labor when there may be a fitness for something higher?

SOME CLAIMS FOR MANUAL TRAINING CONSIDERED.

The third ground on which the argument for industrial training rests is that skill of the hands quickens the mental activities and produces superior mental acumen. Given the ability, through elementary instruction, to read, speak, and write the

English language intelligently (not correctly), put on top of that as a foundation, manual training, and the result is an intelligent man, strong, available, practical. That is, any ordinary American carpenter, mason or artisan should present the best type of an intellectual man, because he combines in himself this happy union of elementary English with manual skill. That would be the common-sense conclusion. But our political, theoretical, or "reform" advocate of this latest educational fad does not state the argument so baldly. He says: "Act induces mental energization and concentration; it operates upon scattered and straggling thoughts something as a drumbeat does at the head of a regiment—gathers them and gives them nerve."* It is indeed a striking metaphor and apt to catch the most of us. But let us reason a little. "Act induces mental energization and concentration." So it does, when a thought, when an idea, precedes it; otherwise, act is automatic and devoid of mental consciousness. The same thing is true of muscular activity, or manual work, exerted continuously in one direction. It soon becomes automatic and allows the thoughts to go a wool-gathering a thousand miles away. "A boy would rather do something than think something."* Granted. But doing is always the result of thinking. The idea first, the act second; mind the cause, act the result,— that is the eternal law of effort. A well matured and instructed mind may give direction and skill to the hand, but the hand cannot impart nor coax skill to the mind. And when the industrial schoolmaster drops into the domain of mental philosophy in his search for argument, let him not begin by putting the metaphysical cart before the metaphysical horse.

TO WHAT DO NATIONS OWE THEIR RANK IN CIVILIZATION?

The tendencies of the day are intensely practical. The short road to wealth is the popular one, and the short cut in education is in high favor, because it is supposed to start one directly on the road to wealth. The rank of a nation is popularly estimated by its cultivated acreage, its manufactures and its exports. But its real value to civilization "must be weighed in scales more delicate than the balance of trade." "On a map of the world you can cover Judea with your thumb, Athens with a finger tip, and neither of them figures in the Prices Current, but they still lord it in the thought and action of every civilized man." * * * * "The measure of a nation's true success is the amount it has contributed to the thought, the moral energy, the intellectual happiness, the spiritual hope and consolation of mankind."

THE TRUE IDEAL OF EDUCATION.

What does not the world owe to those men of Athens? The laws and principles of every department of art, science, literature, and human investigation were by them formulated and defined. Who in painting and sculpture have excelled Zeuxis, Phidias and Praxiteles? Who in thought have surpassed Socrates, Plato and Aristotle? Who has written like Herodotus, spoken like Demosthenes, or equalled the grandeur and simplicity of Homer, the dramatic intensity and fervor of Æschylus and Sophocles?

Outside of the development of the body by a system of natural gymnastics, their educational training, after the elementary branches, was devoted to such abstract studies as grammar, rhetoric, philosophy, arithmetic, music and geometry—nothing practical, nothing industrial. And yet, what more practical examples of striking forethought and sagacity than the law-making of Solon and Clisthenes, the statesmanship of Themistocles and Pericles, or the achievements of the great pupil of Aristotle, the mighty Alexander? Who had broader or clearer views of the problems of government than these men of old, and where do we go to-day but to Athens for our principles of architecture and sculpture, our laws of rhetoric and reasoning, and our principles and methods of scientific investigation?

Theirs was the true idea of education. Train for the duties, not for the business of life. Put every man in possession of the full use of all his faculties, be they few, be they many—and special aptitudes will be sure to take care of themselves. The men of silver and gold will find their places, the men of brass and iron will find theirs, and so shall the State be preserved and perpetuated.

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* Rev. C. H. Parkhurst in the '88 March Forum.

XIV.

THE EDUCATIONAL VALUE OF MANUAL TRAINING.

A REPORT MADE BY THE COMMITTEE ON PEDAGOGICS TO THE NATIONAL COUNCIL OF EDUCATION IN SESSION AT NASHVILLE, TENNESSE, JULY 15, 1889, DURING THE ANNUAL MEETING OF THE NATIONAL EDUCATIONAL ASSOCIATION.

As this volume is in the printer's hands, copies of the report, by the Committee on Pedagogics, and of a paper read by Professor William T. Harris, are received just in season to be inserted as the final papers of the present Appendix. The report is a thoughtful, philosophical treatment of the subject in many of its phases, and merits serious consideration. The concluding paragraphs, in relation to the educational value of Industrial Art Drawing, are commended to all readers of this Report as in full accord with the main purpose of the preparation and publication of these volumes.

REPORT BY THE COMMITTEE ON PEDAGOGICS.

To the National Council of Education:

The undersigned Committee on Pedagogics hereby offer their report on the subject of the Educational Value of Manual Training, a subject that has come to be of prime importance by reason of the strong claims set up for it by its advocates, and, secondly, by reason of the fact that as a cause it serves to unite not only the critics of the educational system already existing, but also its uncompromising enemies ; thirdly, because the claims set forth in its behalf are based not on economic reasons, but on educational reasons, an assumption being actually made that the effect of manual training on the pupil is educational in the same sense as the branches of science and literature heretofore taught, or at least, if different from them, of equal or of superior value to them. This assumption unsettles the entire question of course of study, in so far as it rests on the doctrine of a specific educational value for each of the branches of the course of study, and in so far as it is supposed that the present list of branches provides for an all-sided intellectual training.

WHAT THE COMMITTEE PROPOSE TO DISCUSS.

Your committee accordingly have proposed to themselves in this report to discuss the various phases of this assumption and to inquire in what precisely consists the educative value of the branches taught in the manual training school, and wherein they are supplementary of the work already done and wherein they cover the same ground. They have proposed to treat incidentally also the economic questions involved, inasmuch as the popularity of the movement has its foundation in the conviction that if the schools teach manual training all pupils will be fitted for useful industries before the age of leaving school for business.

PRELIMINARY ADMISSIONS.

1. Your committee in the outset admit the reasonableness of substituting a system of manual training in special schools, in so far as it can be done, for the old system of apprenticeship. That said apprenticeship has been and is wasteful of the time and talents of the pupils is conceded; that a school devoted to the business of educating the youth in the essentials of his trade or vocation is superior to the old system that employed the apprentice in all the drudgery of the establishment and postponed his initiation in the essential matters of his trade. But your committee insists that such manual training ought not to be begun before the completion of the twelfth year of the pupil, nor before he has had such school instruction in the intellectual branches of school work, namely in reading, writing, arithmetic, geography, grammar and history, as is usually required by those statute laws enforced in enlightened States to prevent the too early employment of minors in the industries and the neglect of their school education.

Your committee understand that any amount of manual training conducted in a school is no equivalent for the school education in letters and science, and ought not to be substituted for it. They hold the opinion moreover that neither apprenticeship nor the industrial school should be allowed to take possession of the youth until the completion of his twelfth year at least; the fifteenth year is still better, because physical maturity is necessary for the formation of the best muscular movements to produce skill.

REASONS WHY TRAINING IN THE USE OF TOOLS SHOULD NOT BEGIN TOO EARLY.

At too early an age the pupil with his small hands and fingers, his short and undeveloped arms is obliged to acquire bad habits of holding the implements of labor, just as a child that commences holding a pen too early will not hold it so as to secure freedom of movement. Moreover, the serious occupations of life cannot be imposed on children without dwarfing their human nature, physically, intellectually and morally, and producing arrested development. Not only the games of youth, but the youth's freedom from the cares of mature life should be insured to him if the best preparation is to be made for manhood. It is sad to know that very many children are dwarfed by family necessity, which compels them to bear the weights and cares of mature years. The street gamin in the city is preternaturally acute, but is not in process of growth towards ideal manhood. Later on he will be found suffering from premature old age, in every respect a wasted human life burnt out before it could develop its moral and intellectual ideals. He will have a "Punch and Judy" face such as Dickens ascribes to the stunted products of London street education. Students of anthropology tell us that man surpasses the animals so much in his mature life because he has a so much longer period of helpless infancy. He passes through a hundred grades of ascent above the brute, using all his forces in learning to walk on his hind legs, to use articulate speech for intercommunication, to dress himself in clothes and to put on that far subtler clothing of customs and usages which hold back and conceal his animal propensities and substitute courtesy towards others for selfish natural impulse. Were it not for this diversion of the forces of childhood man might develop like the animals the ability to walk immediately after birth and use his bundle of intellectual instincts at once without the necessity of a long process of education.

TO PROLONG THE PERIOD OF CARELESS CHILDHOOD, DESIRABLE.

On these grounds your committee deprecate the necessities which abridge the period of childhood, and consider this one of the first reforms that social science is demanding, namely the protection of children from the premature assumption of the cares of life. The work of the kindergarten, the schools for waifs and this line of effort will stop the growth of that hopeless class of society that has become arrested below the moral stage of development.

The ever present argument of the economical view of education calls attention to the fact that the great majority of children are destined to earn their living by manual labor. Hence it is argued the school ought to prepare them for their future work. The scientific view that lays so much stress on the protraction of the period of human infancy is opposed to this demand for filling the child's mind with premature care for his future drudgery.

In fact, this scientific doctrine has already been anticipated by the humane Christian sentiment which has founded public schools; for there is a conviction deep seated in the minds of the people that all children ought to be educated together in the humane studies that lie at the basis of liberal culture. Just for the very reason that the majority have before them a life of drudgery, the period of childhood in which the child has not yet become of much pecuniary value for industry, shall be carefully devoted to spiritual growth, to training the intellect and will and to building the basis for a larger humanity. Such a provision commends itself as an attempt to compensate in a degree for the inequalities of fortune and birth. Society shall see to it that the child who cannot choose the family in which he shall be born shall have given him the best possible heritage that fortune could bring him, namely, an education that awakens him to the consciousness of the higher self that exists dormant in him. The common school shall teach him to conquer fortune by industry and good habits and the application of the tools of thought.

THE WRONG DONE THE CHILD'S HIGHER NATURE BY A MERELY PRACTICAL TRAINING.

The economic, utilitarian opposition to the spiritual education in our schools comes before us to recommend that we forecast the horoscope of the child, and in view of his future possible life of drudgery make sure of his inability to ascend above manual toil by cutting off his purely intellectual training and making his childhood a special preparation for industry.

Your committee would at this point call attention to the fatal omission on the part of the economist to see what is implied in his statement that the schools should fit the child for his future duties in life. For when we inquire we discover at once that the trade or vocation in life is but a small part of the total functions of any one's life. It is what goes with the trade or vocation that makes even it a success or failure. What does one need to know besides his trade? To this question your committee enumerate the following:

THE INTERESTS OF SOCIETY AND THE STATE ALIKE DEMAND A BROADER EDUCATION.

First under the head of behavior toward others, his success will depend on his treatment of his fellow-workmen and his employers; on his treatment of his neighbors, and of his family and children. Moreover his behavior as a citizen concerns vitally all who live with him under the same Government; for he conditions to the extent of his single vote; and the proletariat class as a whole may form a majority, and determine altogether what sort of government shall be placed over all, rich and poor, Christian or heathen, humane or selfish. The dude citizen who inherits large wealth and believes that the laboring classes should not be educated beyond the station they are to occupy in life will find that the manual laborers are also voters, and that they decide whether there shall be right of private property or protection of life and limb for him as well as for others.

The illiterate manual laborer, no matter how skilfully educated for his trade in wood and metal operations, cannot read and write. He cannot read the newspaper and take interest in the doings of town, State and Nation, or world at large, except as he hears of it in the turbid stream of personal gossip from fellow-workmen. He is essentially shut in and his thoughts move around in a narrow circle like the horse that turns the wheel of the mill. Nothing can prevent his being the victim of wild schemes of agitation that attack radically all the institutions of civilization. To the observer of the newer and newest phases of modern history, nothing is so clear as the fact that the first necessity of civilization is a system of universal education, not in industry, but in the ideas and thoughts that make up the conventional view of the world — such ideas and opinions as one learns in studying geography and history, and especially literature.

THE EDUCATIVE VALUE OF MANUAL TRAINING ANALYZED AND DEFINED.

2. Your committee would now call your attention, in the second place, to the educative phases of manual training. They admit that manual training is an educative influence; for all that man does or experiences is educative to him, and affects both his will and his intellect. The education of the will takes place by fixing or unfixing habits of doing; the education of the intellect takes place through the ascent from one thought or idea to another; from a narrow point of view to a broader and more comprehensive one; from a vague and general grasp of a subject to an insight that explains all the details, and sees the relations of all parts of the whole.

In so far as manual training schools teach the scientific principles that underlie the practical points of their work they add intellectual education to physical education. Instruction in the natural sciences gives knowledge of nature both as to its modes of existence and as to the forces that form and transform those modes of existence. Natural science, it will be readily admitted, is directly tributary to the emancipation of the laborer because it leads more and more to the invention of machinery. Machinery does the drudgery of the work and leaves to the laborer only the task of supervision. It assumes the physical labor and gives him the intellectual labor of directing and managing it. The more complete the machine becomes the more operations it includes in its process, the more intellect is required to manage it, and the greater becomes its productiveness.

Compare the study of natural science in its general phases with its special applications of the theory of special machines and it is seen that the study of the more general is more highly educative; and your committee would call special attention to the principle on which this conclusion is based. That is more highly educative which lasts longest and has widest scope in its enlightening effects. The explanation of the special machine (the steam engine, for example) is an intellectual acquisition for to-day, and it gives one a ready insight into all other examples to be met with in future experience. But the study of the theories of heat and of the dynamics of elastic fluids gives insight not only into the steam engine but also into a thousand other applications (spouting geysers, oil wells, heating and ventilating houses, meteorology, for example) within one's experience and numberless thousands of examples possible in future experience. Hence the study of pure science is more educative intellectually than the study of special applications of it

Again the study of applications of science is more educative than the labor of making the machine. The theory of its operation involves all realizations of it and is not exhausted until all real and possible varieties of construction have been explained by it. But the construction of a machine adopts one of an indefinite number of styles of construction, uses one kind of material out of many for each of the parts and encounters peculiar difficulties of one kind and another occasioned by temporary conditions that have nothing to do with the nature of the machine or with its construction elsewhere. The laborer thus obscures his general view of the principle of the machine by covering it up with a great collection of details that do not essentially concern it. He is much more impressed with accidental matters of no account in the theory of the working of the machine than he is with the principles of its action. In a second experiment at constructing a machine old difficulties disappear and new ones arise. The intellectual education is of narrow scope and limited in time.

The intellectual factor of manual labor is never very large even in the first construction of a new type of product. The moral education in manual training in the way of perseverance, patience and plodding industry is a far greater educational factor than the intellectual factor.

The education of the muscles of the hand and arm, the training of the eye in accuracy go for something in way of education, especially if these too are of a general character and productive of skill in many arts. But it happens in most cases that the training of the muscles for a special operation unfits it more or less for the other special operations. Every trade has its special knack or skill and not only requires special education to fit the laborer to pursue it, but it reacts on him and fixes in his bodily organism certain limitations which for greater or less extent unfit him for other occupations. The work of blacksmithing, for instance, would unfit one for engraving; the work in planing and sawing would diminish the skill of the wood carver. Work in the trades that deal with wood and metals (and these include the entire curriculum of the manual training school) would be disadvantageous to the delicate touch required by the laborer on textile manufactures, and this class of laborers is nearly as large as the combined classes of wood and metal workers.

Your committee find that the course of study in manual training, in so far as it concerns the education of the hand is limited to a narrow circle of trades in the wood and metal industries, and that so far as it is auxiliary to trades and occupations directly, it covers the work of only one in twelve of the laborers actually employed in the United States.

Indirectly, as dealing especially with the construction of machinery, it has a much wider application, and your committee believe that all laborers who employ machines or tools of any description would be benefited to a greater or less degree by a course of manual training, and that there is something educative in it for all who are to use machines. This is the most important argument that can be urged by the advocates of the manual training school in behalf of its educative value.

FALLACIOUS ARGUMENTS DISCUSSED.

Your committee would here call attention to other arguments often used which are weak and misleading, such for example as the statement that manual training cultivates the powers of attention, perseverance and industry. These are formal powers and not substantial, that is to say, they derive their value from what they are applied to, and they may be mischievous as well as beneficial. The power of attention may be cultivated by the game of chess or the game of whist, or of draw poker, or to the picking of pockets, but it is only attention to those subjects and not attention in general that is cultivated. The whist player who has developed careful circumspection, keen attention, the calculation of probabilities in the matter of cards is quite likely not to manifest them in regard to higher matters of observation of nature or the study of man. All games of boys, for instance marbles, quoits, base ball, jack straws, are educative, especially in such matters as are named as results of manual training, namely: (a) the development of the physical powers; (b) the acquisition of dexterity of hand and accuracy of eye; (c) in perseverance; (d) in attention. These moreover carry with them some general training and give the boy a similar ability in a field of related subjects. But it would not be fair to expect that these qualities of mind would show themselves in the boy's work in mathematics or history, for his interest in these games might make him dull and inattentive to all school studies. Boys may love the work of the manual training school and dislike history, grammar and mathematics, and all book learning, in fact; but to be excellent in manual training would not prevent him from being illiterate and a bad neighbor and a bad citizen — even a dynamiter.

THE EDUCATIVE EFFECT IS IN INVERSE RATIO TO THE SKILL ACQUIRED.

Your committee would further call attention to the fact that what is educative at one time may be entirely without such an effect at another, or, indeed, it may be deadening to the mind. Thus the advocates of manual training admit that it is useful as education only if not carried to the point of arriving at skill in production. This feature, of course, makes against the economical argument in behalf of such schools. According to the economic view skill in production is the primary object aimed at by introducing the training of the hand into schools. But M. Sluys, the Belgian Normal school director who reports on the Swedish system, says that when the child is compelled to manufacture large numbers of a given object in order to acquire skill in the work, the educative value of the work diminishes. "From the third or fourth sample his interest wanes; mechanical repetition invariably excites disgust for any work."

Your committee would call attention here to the fact that if an educative opportunity is gained by not requiring mechanical repetition to the point of acquiring skill, there is also an educative opportunity lost; for the patience and perseverance that pursues its work to the end and bravely keeps down any tendencies to disgust at the lack of novelty is a moral education indispensable to success in any manual calling. No teaching in the studies of the schools as they are would be esteemed of a high order if it did not train its pupils to attack difficult studies like arithmetic and grammar and courageously overcome them. Mere natural disinclination and impatience must be conquered before the child can become a rational being.

THE GREAT VALUE OF INDUSTRIAL ART DRAWING IN ÆSTHETIC TRAINING.

Your committee would further suggest that no justice as yet has been done by the advocates of manual training to the claims of industrial drawing as a training for the hand and eye and the æsthetic sense. If the pupil pursues this study by the analysis of the historical forms of ornament, and acquires familiarity with graceful outlines and a genuine taste for the creation of beautiful and tasteful forms, he has done more towards satisfying the economic problem of industry than he could do by much mechanical skill.

THE IMPORTANCE OF ÆSTHETIC CULTURE.

The great problem in the industry of nations has come to be the æsthetic one — how to give attractive and tasteful forms to productions so as to gain and hold the markets of the world.

The object of the study of drawing in our schools is not the acquirement of a "new art of expression," to use the stale definition put forward by some of the advocates of the self-styled "new education," because it is not worth the pains to learn the art of drawing merely to make pictures of what is seen or what is fancied. Rather is drawing the best means of acquiring familiarity with the conventional forms of beauty in ornament — forms that express the outlines of freedom and gracefulness and charm all peoples, even those who have not the skill to produce such forms.

Some nations, like the French for example, have educated their working classes for many generations in this matter of taste, and it has become a second nature. Other nations, the Anglo-Saxon among them, are not naturally gifted with a taste for the production of the beautiful, but rather with a tendency to look for the dynamic, the lines of force rather than of freedom. They are content to produce what is strong and durable and useful. But this has led them to the discovery that they must also be content with inferior places in international expositions and with a virtual exclusion from the markets of the world. Only a high tariff can force any considerable consumption of useful articles of clumsy and unsightly shapes.

In view of these facts your committee have deemed it desirable to mention industrial drawing and the true method of teaching it by the analysis and production of the standard ideals in ornament, as worthy of most careful consideration on the part of all, and especially on the part of all interested in manual training instruction, either for its economical or its educative advantages. Respectfully submitted.

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XV.

THE INTELLECTUAL VALUE OF TOOL WORK.

By W. T. Harris, Concord, Massachusetts.

[A paper read before the National Educational Association, in Nashville, Tennessee, July 15, 1889.]

Man, like the animal, has natural wants, which he must gratify in order to live on the earth. While the animal needs food, and to some extent shelter, man needs food, and shelter, and clothing. In order to get possession of these things, he must struggle for them and wrest them from nature, depriving plants and animals of their vital principles and converting them to his own uses. Whereas the plant feeds upon soil and atmosphere in so far as it finds them in immediate contact with itself, and the animal is able to seek a new environment and use its limbs as tools or instruments with which to seize upon the means of supplying its wants, man on the other hand, although less endowed with strength than many of the animals, and with scanty natural provision for clothing, yet is able to surpass the animal in gratification of his wants, by cunningly aiding his natural forces and instruments by invented ones. He devises instruments out of natural materials, mineral, animal, and vegetable substances and their chemic elements, of such efficiency as to enable him to command the resources of land, and sea, and air.

Whatever seems at first a limitation to him, or a hostile might threatening him with destruction, or imposing upon him the necessity of drudgery for daily assistance, becomes by and by an auxiliary power friendly to man after he has conquered it by the magic of his intellect.

Man as inventor of tools and machines, and the combiner of nature's forces, presents for us the most interesting object in the universe. Let us take a survey of him as the maker of tools and the wielder of them. Intellectual and moral power unite to give man this power of invention. It is intellectual cunning which discovers the powers and adaptations of things and converts them to his uses. It is the moral power of self-conquest that enables man to sacrifice the ease and comfort of the present moment and to endure privation, in order by industry and patient attention to accumulate a capital of physical means and acquired experience sufficient to produce an invention.

The first step above the brute instinct begins when man looks beyond things as he sees them existing before him, and commences to consider their possibilities; he begins to add to his external seeing an internal seeing; the world begins to assume a new aspect; each object appears to be of larger scope than its present existence, for there is a sphere of possibility environing it, a sphere which the sharpest animal eyes of lynx or eagle cannot see, but which man, endowed with this new faculty of inward sight, perceives at once. To this insight into possibilities there loom up uses and adaptations, transformations and combinations in a long series stretching into the infinite behind each finite real thing. The bodily eyes see the real objects, but cannot see the infinite trails; they are invisible except to the inward eyes of the mind.

What we call directive power on the part of man, his combining and organizing power, all rests on this power to see beyond the real things before the senses to the ideal possibilities invisible to the brute. The more clearly man sees these ideals, the more perfectly he can construct for himself another set of conditions than those in which he finds himself.

Men as tool workers, as managers of machines, participate in this higher kind of perception in different degrees, but all have it to some extent. The lowest human laborer has the dimmest notions of these ideals; they are furnished him by others; he is told what to do; he furnishes the hands to work with, and some one else furnishes the brains or most of the brain work. Unless a directing mind is near by to help at every moment with the details of some ideal, the rude laborer ceases his work, having no knowledge of what is required next. His capacity to grasp an ideal is very small; he can only take it in tiny fragments—small patterns dealt out to him as a hand by the directing brain of the overseer or "boss."

It seems a waste of power to have two brains to govern one pair of hands. It is evidently desirable to have each laborer developed in his brain, so as to be able to see ideals as well as to realize them by his hands.

The development of this desirable power we call education of the intellect, and its chief means is science. Science is the systematized results of observation. Each fact in the world is placed in the light of all the other facts. All facts are made to help explain each fact. This is science. Now each fact represents only one of the many possible states of existence which a thing may have. When one state of existence is real the others are mere possibilities, or, as they are called, "potentialities." Thus water may exist as liquid, or vapor, or ice, but when it is ice the liquid and vapor states are mere potentialities.

Science collects about each subject all its phases of existence under different conditions; it teaches the student to look at a thing as a whole, and see in it not only what is visible before his senses, but what also is not realized and remains dormant or potential. The scientifically educated laborer, therefore, is of a higher type than the mere "hand-laborer," because he has learned to see in each thing its possibilities. He sees each thing in the perspective of its history. Here, then, in the educated laborer, we have a hand belonging to a brain that directs, or that can intelligently comprehend a detailed statement of an ideal to be worked out. The laborer and the "boss" are united in one man.

There are, as we have said, different degrees of educated capacity, due to the degree in which this power of seeing invisible potentialities or ideals is developed. The lowest humanity needs constant direction, and works only under the eye of an overseer; it can work with advantage only at simple processes; by repetition it acquires skill at a simple manipulation. The incessant repetition of one muscular act deadens into habit, and less and less brain-work goes to its performance. When a process is reduced to simple steps, however, it is easy to invent some sort of machine that can perform it as well or better than the human drudge. Accordingly, division of labor gives occasion to labor-saving machinery. The human drudge cannot compete with the machine, and is thrown out of employment and goes to the almshouse or perhaps starves. If he could only be educated and learn to see ideals, he could have a place as manager of the machine. The machine requires an alert intellect to direct and control it, but a mere "hand" cannot serve its purpose. The higher development of man produced by science therefore acts as a goad to spur on the lower orders of humanity to become educated intellectually. Moreover, the education in science enables the laborer to easily acquire an insight into the construction and management of machines. This makes it possible for him to change his vocation readily. There is a greater and greater resemblance of each process of human labor to every other, now that an age of machinery has arrived. The differences of manipulation are grown less, because the machine is assuming the handwork, and leaving only the brain work for the laborer. Hence there opens before labor a great prospect of freedom in the future. Each person can choose a new vocation and succeed in it without long and tedious apprenticeship, provided that he is educated in general science.

If he understands only the theory of one machine he may direct or manage any form or style of it. He could not so easily learn an entirely different machine unless he had learned the entire theory of machinery. The wider his knowledge and the more general its character, the larger the sphere of his freedom and power. If he knows the scientific theory of nature's forces he comprehends readily not only the machines, but also all nature's phenomena as manifestations of those forces. Knowledge is educative in proportion to its enlightening power or its general applicability. The knowledge of an art is educative because it gives one command in a sphere of activity; it explains effects and enables the artisan to be both brain and hand to some extent. A science lifts him to a much higher plane educatively, because he can see a wide margin of possibilities or ideals outside of the processes in use, and outside of the tools and machines employed.

Education, then, takes these three steps: First, to do what is directed by authority; secondly, to know the theory of the art or trade as it is and has come down by tradition; thirdly, to know the general science of the subject, and comprehend not only the processes that have been realized, but the possibility of others.

The civilization in which we live is well characterized as a scientific one, and it is making great strides toward the conquest of nature. It demands, too, as we see, an education for all people. There is less and less place left for the mere drudge, all hands and no brains. Machinery can do his work so cheaply that his wages must be very slender. The education demanded, moreover, is not the training in technical skill so much as in science. For the more general training emancipates the laborer from the deadening effects of repetition and habit, the monotony of attending the machine, and opens up a vista of new invention and more useful combinations.

While the student is learning a method of doing something his brain is exercised; when the process has become a habit it is committed to his hand, and his intellect is not required again except for new combinations. This is true of all machine work, of all tool work. Its theory is soon exhausted, and the deadening process of habit sets in. Science is perpetually living, always educative. The mind goes from principle to principle; it discovers and inventories new provinces of nature, and applies its principles to their explanation. In reaching vaster unities of nature it finds deeper principles.

Not the study of tools and machinery, but that of natural science, is more educative, therefore, because it keeps the mind in perpetual activity.

If we pause here and ask ourselves, what is the scope of the inquiry thus far made? we shall be obliged to confess that we have regarded man only in his animal nature, possessing bodily wants of food, clothing, and shelter. We see at once that this is no inventory of man's wants—it falls infinitely short of his requirements as a spiritual being. If machinery were invented so that he could get food, clothing, and shelter in abundance and of the finest quality at the cost of a moment's labor each day, all this would be of small account as an item of civilization unless the human energy saved from drudgery had found channels of expenditure in the vocations relating directly to the education of the spiritual nature of man.

Here we come to the all-important distinction between that which belongs only to the nature of a means instrumental to something else different from itself, and that which is an end for itself. The human mind or soul is an end for itself. Matter and the body are only instrumental, only means for the perfection of the soul.

What, we inquire, are the ideals of perfection of the soul, then? For it would seem that all through our industrial processes there should have prevailed a guiding purpose to subordinate all human endeavor to the interest of the mind. We have already taken note of the science of nature as a purely theoretical study, more educative than any form of art because it is the source of inexhaustible activity in the intellect. Nature in time and space is one world for man's scientific mastery. Over against this there is another world for his science, the world of mind.

Nature is before us as organic and inorganic realms. Mind reveals itself in three forms, thinking, willing, and feeling. Leaving this psychological point of view, it will be more interesting for us to look at the world of humanity in three aspects. Human nature has revealed itself in institutions, social structures organized so as to make the strong help the weak; the mature assist the immature; the wise the simple; these institutions are the family, civil society, the state or nation, and the church. These institutions are the outgrowth of the human will. In the business of education the youth learns human nature as will in studying history—history taken in a very broad sense. But even history in a narrow sense gives him glimpses of all these institutions acting and reacting upon each of these. One sees the evolution of civilization by the study of history. Here, then, is a branch of study which we must regard as educative in the highest possible degree. Natural science, valuable as it is in emancipating us from drudgery, is rather a science of that which is a means for the development of man as a spiritual being. But history is a science of that which is an end for itself, because it is the exhibition of the structure and evolution of civilization.

History is only one of the spiritual sciences. There are sciences that relate to mind as intellect in its essence such as philosophy and psychology and logic, with kindred sciences like comparative philology offering to us the revelations which different peoples of the earth have made of their mental structure in language. This study deals also with that which is an end for itself. Again, there is the department of literature and art, in which man has portrayed for himself his human nature in the form of feelings and convictions leading outward and upward to thoughts and actions. For the heart is in a certain sense the primitive fountain from which flows the life-thread before it is divided into the strands of intellect and will. Literature shows us this deepest source of civilization. Homer, Dante, Shakespeare, and Goethe reveal prophetically what after ages work out into clear thoughts and actions. Here then is another, and a very important study of what is always an end for itself.

History, the revelation of the nature of human will; philology and philosophy, the revelation of what is essential in the human intellect, or the divine part of it; literature and the fine arts, the revelation of the human heart!

First, human nature evolves a dim feeling; then develops it into an idea; then realizes it in a deed, and it becomes an institution to bless the race.

There are three departments to the world of human nature, and two departments to the world of nature below man—organic in plant and animal, inorganic in matter and force.

With this survey of human learning, we are now prepared to see what the school has done in the past and present to provide an educative process for the child by giving him a survey of the two worlds in which he lives, the material and spiritual worlds—the world of means to an end outside of itself, and the world which is an end for itself.

School education should open five windows of the soul, and let it look out upon the two departments of nature and the three departments of mind. Now it surprises us at first to see that school education has done this very thing by its course of study. Arithmetic gives the first glimpse of inorganic nature, for it reveals the nature of quantity, and quantity gives the law to time and space, and to all bodies. Then in geography a glimpse is given of organic nature as related to the inorganic on the one hand, and as related to man on the other—a very educative study indeed! Then there is grammar, which looks into the logical structure of the intellect as revealed in language; history, which reveals the human will; literature in the school readers, showing how the great geniuses of the language have revealed the aspirations of the people in impassioned prose and poetry.

The school does something more than give this all-round glimpse of man's five-fold world. The school teaches the pupil how to restrain his animal impulses to prate and chatter, disturbing the work of others, and himself idle; it teaches him the great lesson of industry and perseverance; it teaches him regularity and punctuality, the great virtues that lie at the basis of all human combination; it teaches courtesy and good social behavior; it lays greatest stress on truth-speaking, by showing the pupil in every recitation how important it is to be accurate in statement, and to fix the exact facts by verification and research.

The studies and disciplines of the school therefore open the windows of the intellect upon all points of the horizon of existence, and they train the will to labor at what is most difficult because most unusual for the animal nature. The lower organized human being can work with his hands with pleasure, while it is still a task of great difficulty for him to contemplate ideas or undertake any sustained trains of thought. If youth can be taught to bring their powers to bear on such ideal subjects as arithmetic, grammar, history, and literature, they certainly can with ease give their mind to any form of manual training or the work of external observation, because the greater includes the less, and the studies of pure science are far more difficult to carry on than studies in applied science.

If we now ask the question, What is the comparative value of tool work? we may see our way to reply, Tool work without the theory of construction is educative to some extent, especially in the first stages of its practice. Tool work taught with the theory of machinery, with applied mathematics, is far more educative than mere tool work, and its educative influence lasts for a much longer time. Tool work with its theory and with natural science is permanently educative, and it does much to raise manual labor above drudgery, and especially is this the case if it is studied with the history of ornamentation and with careful cultivation of æsthetic taste.

But when compared with the present course of study in the schools it cannot be claimed that manual training opens any new windows of the soul, although it may give a more distinct view from the window that opens towards inorganic nature.

There remains, notwithstanding, a permanently valid place for the manual-training school side by side with apprentice schools for all youths who are old enough to enter a trade, and who are unwilling to carry on any further their purely culture studies. Cultivate the humanities first, and afterwards the industrial faculties. In our civilization there ascend out of the abyss of the future, problems of anarchy on the one hand and of socialism on the other; individualism carried to such extremes that all subordination to peaceable and established law is deemed a fetter to freedom. This centrifugal tendency to anarchy is paralleled by a centripetal tendency that wishes to have the central government perform not only all the duties of establishing justice and securing the public peace, but also to have it own all the property and manage all the industries. In short, the nationalists propose abolishing the sphere of competition and individual enterprise. Education in the history of the world, and in the literature that reveals the aspirations of the human heart, is well calculated to prepare the youth for a rational verdict on the extreme issues that will continually arise among a free people. Above all, we must never yield to the economic spirit that proposes to curtail the humanizing studies in our schools for the sake of adding special training for industries. Rather must we do what we can to extend the period of study in pure science and the humanities, knowing as we do that all which goes to develop the ability of the youth to see possibilities and ideals, goes to make him a more productive laborer in the fields of industry.

APPENDIX M.

PAPERS

RELATING TO THE

ORIGIN AND EARLY DEVELOPMENT OF THE INDUSTRIAL EDUCATION MOVEMENT IN THE UNITED STATES FROM 1872 TO 1889,

WITH

A SUMMARY OF EUROPEAN EXPERIMENTS.

I. Introduction.

II. An early statement of the need for Industrial Education, made in a memorial addressed to the Legislature of Massachusetts, by Lizzie S. Batchelder, M. D., in 1872.

III. The Industrial Education movement as contemplated by Walter Smith. A brief plea for the retention of "The Art Ideal," by I. Edwards Clarke.

IV. "Industrial Education, and Drawing as its basis." An address by Walter Smith, (1878.)

V. Technical Training in American Schools; by President E. E. White, LL. D. (1880.)

VI. "Manual Education in Public Schools." An account of the early experiments in Gloucester, Massachusetts, by Superintendent L. H. Marvel, (1882.)

VII. "Industrial and Technological Training." A comprehensive summary of European and American efforts, by Mrs. Sarah Sands Paddock, (1884.)

VIII. "Hand and Eye Training in the Public Schools." Extracts from a paper read before the Illinois State Teachers' Association, by Superintendent W. S. Mack, of Moline, Illinois, in 1885.

IX. The Public Education Association of Philadelphia. An account of its origin and works, compiled from the Eight Annual Reports, issued up to 1889.

X. Public Education Society of the City of New York. (1888-9.)

I.

THE BEGINNINGS OF THE INDUSTRIAL EDUCATION MOVEMENT.

INTRODUCTION.

The papers collected in this Appendix contain a certain amount of historical matter showing something of the genesis and development of the Industrial Education movement.

First. In the memorial address made by Miss Batchelder to the Committee of the Massachusetts Legislature in 1872, in which the claims of all the children to industrial education are eloquently presented. Such statements, although so familiar in these later days, were then novel and almost revolutionary.

Second. In the address of Professor Walter Smith, when Art Director of the State of Massachusetts, made to the State Teachers' Association at their meeting in Worcester, in 1878, in which the relation of Industrial Art drawing to this subsequent movement is clearly indicated.

Third. The paper published in 1880 by President E. E. White, of Purdue University, is a landmark showing the progress of the movement; while Superintendent Marvel's recital of his experience is an interesting account of one of the earliest experiments in putting manual training in a common school.

There is hardly occasion in this volume for any addition to the account, given in previous pages, of the history, development, and work of the New York Industrial Education Association. The paper by Mrs. Paddock, the former efficient Secretary of that Association in its early days, contains, however, a very interesting and succinct compilation of facts bearing upon these movements for industrial education. It will be noticed that the work she contemplates is rather outside of and supplementary to the public schools. It relates to a special class of schools, is *industrial* rather than educational, and ignores art. It refers to charitable undertakings rather than to efforts in the line of official duties. Nevertheless, by reason of the clear statements made of European educational experiments, and the recital of efforts in various European countries to give to girls and women some practical training in trades and industries, it is a very valuable and suggestive paper.

The extracts from the paper read by Mr. Mack to his associate teachers, are worthy of attention as giving the results of practical experience.

The account of the Public Education Association of Philadelphia, compiled from the official reports of that association, will be found of interest; since this voluntary coming together of private citizens in a single city, with the definite purpose of influencing public action in educational matters, furnishes an admirable example of how, in free communities, where speech and action are untrammeled, public opinion is instructed, concentrated and formulated; until, finally, it results in public action; and is crystallized into public institutions, or laws, as the case may be. These records show, also, not only what has already been attained, but what new conquests are contemplated; what plans are gestating in the ever active minds of these public spirited men and women. This Association furnishes, by another striking illustration, proof of the truth that the vast educational needs of the public cannot be met by private endeavor, but must be undertaken by the public through organized instrumentalities.

The Public Education Society of New York, a similar association organized in 1888, signalizes its advent by presenting a strong memorial to the Board of Education; setting forth various needs of the schools and giving a clear statement of the present situation. The brief account of this new and welcome champion of the rights of the children is compiled from this memorial.

II.

AN EARLY STATEMENT OF THE NEED FOR INDUSTRIAL EDUCATION.

INTRODUCTION.

It is an interesting fact in the history of the present movement to promote Industrial Education, that, as long ago as 1872, only two years after the coming of Walter Smith to Boston, a woman who had won her diploma as a physician, delivered an address before a Committee of the Massachusetts Legislature in which the claims of Industrial Education were eloquently urged.*

The following extracts will show the broad basis upon which she placed the claims of Industrial Education to State support. It seems fitting that these initial arguments should precede the extracts given from the later addresses and discussions which here follow in due order of the time of their delivery.

MISS BATCHELDER'S ADDRESS.

Mr. Chairman and Gentlemen :—

This Republic was founded on the idea that the people are the State; therefore, it must rise or fall according to the character of its people. * * *

Our public schools are certainly the foundation of our prosperity, and the glory of our civilization; the institution in which we have come to feel the most genuine pride, and which has excited the admiration and emulation of the whole civilized world. We proudly boast that there is not a boy or girl throughout our land who is not able, not only to gain the rudiments of knowledge, but to become a thorough and profound scholar, at the expense of the State.

Far from me be the wish to depreciate the good that has been accomplished by our public schools.

DO THE PUBLIC SCHOOLS NOW SATISFY THE JUST DEMANDS OF THE PEOPLE?

But here we must pause, and ask if these schools do all that we claim for them. Do they give us the strength and culture that is indispensable for the preservation of a republican form of government? Do they educate the people practically? Do they fit all to become self-reliant and heroic? Do they train all to appreciate and cultivate the beautiful endowment of nature with a view to the fulfilment of their destiny? Do they make it possible for every one to work according to his capacity?

No; they do not. Their results are superficial and speculative, rather than practical. True mental culture is often sacrificed to an ostentatious display of memory, and the storing of the mind with dead matter that is comparatively useless in the practical business of life. * * * A true and complete system of education would give us true men and women, conscious of their own mental and spiritual freedom, able to shape their lives in accordance with their individual talents and needs, and to contribute their share to the work of creating and maintaining the prosperity and happiness of the whole community.

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* "A Memorial on Industrial Schools, delivered before the Committee on Education of the Massachusetts Legislature February 1st, 1872, by Lizzie S. Batchelder, M. D., Boston: Alfred Mudge & Son, Printers, 34 School Street, pp. 18, 1872."

Under the present system, a large number of children are debarred from the schools by their one-sidedness, or because they do not meet their necessities.

It is estimated that in the city of Boston alone, there are from five to ten thousand children of poor, struggling families, who require their offspring to earn a daily pittance as the price of affording them the miserable shelter of a roof. These children support themselves by selling matches, soap, shoe-strings, toys, photographs, etc. They are from seven to twelve years of age. Their average earnings are from ten to seventy cents per day. They are left to grow up uneducated, both mentally and physically; their feelings are brutalized by habits that will eventually render them pests to society. Then there is the small army of beggars, going about the streets, learning full early the vices that fester in every large city.

It is from the ranks of these poor little neglected children that our State prisons, houses of correction, State and city reformatories, are filled. It would require no amount of wisdom to prophesy that this would be so, but our statistics prove it beyond a question. * * *

It is startling to think of the demoralization that must result to the community from the perversion of so large a portion of its members; and the fact that these poor children are allowed to be thus perverted, surely suggests, or rather proves, that the state is criminally liable for its neglect of its most important duties to its future citizens.

Bancroft says: " It became the law of New England that education should be provided for. Every child, as it was born into the world, was lifted from the earth by the genius of the country, and in the statutes of the land received as its birthright a pledge of the public care for its morals and its mind."

How is this pledge kept to these ten thousand children who, in the city of Boston alone, are allowed to grow up criminals and vagrants? Where is the genius of the land,—which, according to Bancroft, has promised to every child as its birthright the care of its morals and its mind; which has promised to raise them up from the earth, into a self-reliant and noble manhood? Why does the genius of the country forget these children? Why does it suffer them to slide down into hopeless and irredeemable degradation and misery?

WHAT PUBLIC SCHOOLS SHOULD DO.

The state should be a living mother to her children; she should rescue them from habits of idleness, and inculcate in them habits of industry, by methods which she can very readily command. She must not dismiss them from her schools until she has taught them the elements of usefulness; her schools should be such as to prepare them to meet all the emergencies of life with credit to themselves and satisfaction to others. At present, they do neither; they throw young people out upon the world who are untrained to work, and unable to think to any good purpose. The consequence is, they make bad citizens and often fall at once into crime. * * *

HOW INDUSTRIAL EDUCATION WILL BENEFIT THE SCHOOLS.

The introduction of industrial elements into the schools will do away with these evils, because they will strike at the very root of the great wrongs that have sprung up into strong gigantic trees, and overshadow with their spreading branches the whole country.

All the wisdom of our age proves that the body should be trained, as well as the mind, by a true system of education. It is equally important (except in the very small class who intend devoting themselves to intellectual pursuits professionally) that all pupils should not only be taught book-learning, but that they should be thoroughly trained in some useful avocation that will enable them to earn an honest livelihood. The hands and the eye should be trained, as well as the intellect, so that the pupil may not only be an apt student, but a thorough mechanic; so that he may combine knowing with doing; it is this combination, and this alone, that makes the intelligent and successful workman. * * *

It is proverbial that our greatest men and women are self-made, as it is called. It is not from the schools, but from the stalls, the shops, and the work-rooms, that they have issued. Why is this? It is because they acquire, in pursuing their humble avocations, health and practical industrial ability; and of the two branches of education, the intellectual and industrial, the latter is the most important. Having acquired this, the cultivation of the mind often becomes a passion with them, and they learn more in one year, by their unaided efforts, than an army of mediocre one-sided school boys do in a life-time devoted to books.

We shall never know what are the spiritual and intellectual resources of the people; our truly great men and women will never come to the surface and be recognized until these two systems of intellectual and industrial education are united, and their advantages freely accorded to all; until it has become the law of the land, that all the people shall have full opportunity to develop their powers. Labor is not a curse, but a blessing; the divine benediction that is to quicken the race, and prepare us for the coming of the kingdom of heaven.

Ambitious parents are constantly throwing away their money in trying to educate their boys as ministers, physicians, and lawyers; but with all their efforts, they only succeed in dooming them to a life of disappointment and failure; and yet these boys have all been endowed with an aptitude for, and love of, some calling; and if educated in the right direction, they would be able to find out what they are fitted for; they would choose their right vocations, and be crowned with satisfaction and success.

THE REFORM PROPOSED.

What we want is a radical reform in our system of education; or, rather, that it be expanded and enlarged, in order to meet the needs of the people.

We want industrial schools to be established side by side with our common schools, or incorporated with them. They should be established by the State and national government; established, not as a charity, but as a right of the people provided them by the government, to enable them to become true and good citizens; established not for the poor alone, but for the rich and poor alike, because all labor is honorable, and because the training of all ranks to it will make it felt to be so. We want part of the time to be devoted to intellectual culture, and part to the study of the principles and practical application of industry; thus enabling the pupil to develop his natural talents according to the endowments of nature and the requirements of his life. This can very readily be done in our lower schools without interfering with what is important in the present system, by giving children models, and teaching them to acquire—by simple rules and principles—the elements of industry. As the pupil advances and shows evidence of talent in any department, there should be special schools to receive him, and train him to perfect and become master of his natural gift. This would be educating according to the laws of God and nature, and would require no greater expenditure of money than that already used for the maintenance of the present system; but even if it should, how could money be better expended than in building up institutions that will secure prosperity to the country and develop the latent powers of the people? Surely no outlay could possibly be extravagant in order to accomplish this object. The study of the natural human forces becomes a necessity; for their employment adds much to the powers of the soul, and aids materially in the economy of time and money.

If the main objects of life were the creation and fabrication of literature, we should not dispute the wisdom of so much book-learning in the foundation of our education. If classical literature were all that is required to construct steam-engines, build houses, ships, railroads, to manufacture cotton, to raise corn and fit it for bread, then our present system of education is right; but if we have to be strengthened physically and mentally for the perfection and mastery of the sterner acts of industry, is it not right that we should be taught the nature of the principles involved in their successful prosecution?

IN WHAT RESPECT ARE OUR SCHOOLS NOW LACKING?

It is well to enquire, In what are we deficient, and what is the nature of that deficiency? Surely, it is not in the want of public liberality or private enterprise in education, but because our system of education is unsuited to the wants of the age. We must not let great national events blind us to this fact. The Roman empire fell because, nourishing its pride, it refused the lessons of defeat and pronounced them victories. The position of every nation in the scale of civilization is to be determined by the extent, want, and nature of its industrial developments. The contribution of any nation to the sum of a universal civilization, is the surplus which this diversified system yields. Civilization cannot be conferred on a people, it must be self-developed; consequently, this American industrial system can only be perfected through national schools, embodying the principles of a republic. Surely, no nation had ever a grander opportunity than America, with her great natural resources, both animate and inanimate.

It is the skilled and intellectual workman that becomes the life and soul of industry; but without proper appreciation and encouragement, he fails to reach the highest results. Industrial art must be raised to the standard of a profession, so that its followers shall have rank and social position. At present the best minds do not, except in rare cases, adopt it; and places of trust and of vital importance are left in the hands of ignorant and irresponsible persons. * * *

CITIZENS OF A REPUBLIC SHOULD BE EDUCATED AS TO THEIR DUTIES.

The great responsibility of self-government should not be thrust upon the people without fitting them for the task. A man having but half his faculties developed is but half a man; and as with an individual, so with a nation. If the principles of industry are false, then American republicanism becomes a failure, like that of Greece, Rome, and Italy, from whose experience it would be well for us to borrow instruction and grow wise. An ignorant people can be governed, but only a wise people can govern themselves.

The problem of the day is, therefore, the education of the masses; and the solution of this problem is to combine industrial with mental training. Educated labor, and this alone, can prevent the people from becoming corrupt and losing their birthright as a free nation. Time is too valuable to be frittered away in so educating people as to fit them merely for the drawing-room; that has been done until the atmosphere of our social life has become insipid and foul, producing idleness, effeminacy, and insincerity. A glance at the condition of modern society is sufficient to show how indispensable it is that girls should be educated, not only to be efficient housewives, but also that they should acquire a thorough knowledge of some business or profession. It is to the highest interest of men, no less than of women themselves, that the latter should be more independent and self-reliant.

But how can they become so, unless the industrial and professional pursuits in which they are fitted to take part are freely opened to them; and unless they are educated to a standard that will enable them to command success in these undertakings?

A PLEA FOR THE INDUSTRIAL TRAINING OF GIRLS.

The present system leaves woman too often a mere toy, a soulless automaton, a useless ornament, when she should be both a worker and a thinker, and a valuable helpmeet to man. It is because she is not so already that many young men who have to earn their livelihood are getting more and more disinclined to marriage; they are afraid to unite themselves to young women, who, with their organization enfeebled by over-study, are unfitted to bear their share of the burdens of married life, and whose merely ornamental scholarship inspires them with an ambition for wealth, without in any way helping them to attain it. We hear rich men say, we do not want our daughters to learn trades and professions. Why not? Because you wish to have them inferior to the children of your poorer neighbors? The millions which you leave them at your death may be swept away in a single day.

It is impossible in this country to predict who will be wealthy a year hence, and the daughter you now so tenderly love and cherish may be thrown upon the cold charity of relations or friends; may pine in isolation and misery, to sink at last in the moral mire of our great cities. But if you develop her talents truly, her capital will be within herself, and no adverse fortune can prevent her from leading a noble and honorable life, attended with happiness and health.

THE DANGERS RESULTING FROM HALF-EDUCATION.

An incomplete development, a smattering of science and accomplishments, are most dangerous to both men and women. They show them a broader horizon, without giving them the strength to reach it. They make them believe they know what they are really ignorant of, and thus entail a disturbance, a disorder, and an ostentation which often produce lamentable results. Their half-educated minds no longer satisfied with common life, and to which some excitement is necessary, will seek their gratification in emotions and pleasures which are always dangerous and often guilty. The prejudice that exists among the rich against labor, and, above all, against allowing the women of their own class to engage in any pursuits that would make them useful and independent, is one of the great obstacles that in the future we shall have to contend with. This must be removed by the common-sense of the great mass of the people, and in time it will entirely be done away with. Unfortunately, this prejudice has already undermined the health and happiness of both rich and poor. The poor, aping the manners of the rich, learn idleness as one of the fine arts,—an art to be exhibited everywhere, and worthy to be the aim and object of life! The first effect of Industrial Schools will be to elevate labor to its proper dignity. As soon as this is done, the prejudice will disappear. After these schools have been thoroughly organized, and their fruits have begun to ripen, it will no longer be considered a disgrace to work, but a burning disgrace not to be thoroughly proficient in some useful employment. * * *

WHAT THE TERM EDUCATION SHOULD COMPRISE.

Education means something broader than the knowledge and use of words; it means the harmonious blending of all the faculties with a view to fulfilling the design of the Creator. This education the people demand, and the State has no right to withhold it from them; this is their vested right under the constitution; and yet, they are pleading for it with an eloquence that shames and beggars words, while their blighted hopes, their disappointed lives, their wasted energies, are all drifting towards the abyss of chaos from which there is no hope of recovery.

Children should be taught that work is essential to health and happiness; that it is not the kind of work, but the excellent way in which it is done, that gives dignity to it; and that the hand is important to the cultivation of the brain, as well as the body.

This education will supersede the degrading influence of pauper institutions; it will prevent crime, help to annihilate the almshouse, the asylum, the prison, and the scaffold. It will be its final triumph to do away forever with all such institutions as now encumber our great cities, fostering evils which they can not and do not propose to eradicate.

UNIVERSAL EDUCATION THE RIGHT OF THE PEOPLE.

Gentlemen: We cannot too often repeat that the system of education we are advocating must be founded for the benefit of all classes, as a principle of national development,—not as a charity for the poor, or a punishment for crime.

It must not be under the auspices of penal institutions, for that would stamp upon the young and plastic mind of youth debasing impressions from which they could never rally. This education must begin in childhood, with the first development of its responsible consciousness, before any habit of idleness and vice are contracted. If you save the children, you save the commonwealth.

HOW INDUSTRIAL EDUCATION WILL PROMOTE THE INTERESTS OF THE REPUBLIC.

As a means of education, we believe industrial art to be the link missing in our system. As a matter of political economy, it will impart to the intelligent worker artistic skill, that will enable him to perform whatever he undertakes with credit to himself and satisfaction to others.

The unskilled laborer is wasteful, restless; tormented with a longing for change, because he has no enjoyment in his work, and lacks that natural stimulus to be industrious and persevering. This is the condition of a great part of our laborers to-day, and is the cause of their outcry against capital. While the poor are crying for bread, the rich are complaining that they cannot find those who are competent to do what is required of them.

Educated labor will do away with these complaints, and teach the rich and the poor what is right and just. The laborer should be taught how to utilize his means and strength, so as to do the most, instead of the least possible, for his remuneration; at present he wears himself out by a routine of clumsy toil that produces no satisfaction to himself or his employer. But this new education will give him a power that will enable him to utilize and control all those energies which now, turbulent and misdirected, are either wasted, or the cause of confusion and actual disorganization.

This country has been made what it is by the efforts of the people,—for the most part, a sober, peaceful, liberty-loving people; upon their strong hearts and shoulders still rests the weight of this grand, but crude structure, and their wants and aspirations demand the most respectful consideration. Whatever institutions are necessary to their well-being, or would conduce to their happiness, it is the first duty of the State to establish. This the people demand, because it is right, and because, as a free people, they love liberty and hate oppression; because they prefer to live by honest industry rather than by intrigue and rascality.

In Prussia, every man is compelled to serve an apprenticeship of several years in order, not only to become a soldier, but a mechanic. What is the result? Prussia, a small State wholly insignificant in size, is the great military power of the world; the power that to-day, more than any other, controls the destiny of Europe. Skilled, educated labor, under the fostering and protecting care of the government, comes into its true co-operative relation with all the sources of national wealth. So this great republic, whose watchword is peace, should require of every one of its citizens, both men and women, to serve an apprenticeship that will give them the mastery of all their faculties. Then its grand industrial armies would sweep poverty from the land throughout its broad compass, from Maine to Texas, and from the Atlantic to the Pacific Ocean. Then we would be taught to look upon the telegraph, factories, and the steamboats, with their machinery, mighty as the thunderbolt that lays prostrate the monarchs of the forest, as positive experiments of the power of man; as symbols, instruments, and manifestations of his activity, beauty, and grandeur; as articulate utterances of his divine soul,—melodious, grand, majestic poetry,—raising the world higher and higher towards its sublime destiny. Then, indeed, should America stand foremost as the guide, the protector, the re-organizer of the whole world!"

III.

THE INDUSTRIAL EDUCATION MOVEMENT AS CONTEMPLATED BY PROFESSOR WALTER SMITH.

A BRIEF PLEA FOR THE RETENTION OF THE "ART IDEAL."

BY I. EDWARDS CLARKE.

That the present movement for the promotion of Industrial Education, both elementary and secondary, in public schools,—as well as the establishment of night classes, and of High class Technical Schools, readily accessible,—was the logical result of the success of the Massachusetts experiments in introducing the Walter Smith methods of teaching Industrial Art Drawing in the public schools, has been repeatedly stated in the present volume of this Report, and is, I believe, generally admitted. That the further development of Industrial Education based upon the firm foundation of a generally prevalent knowledge of Industrial Art Drawing, was not only early foreseen and foretold by Walter Smith, but that it was one of the purposes definitely sought by him, may be as confidently asserted.

The following extracts from a notable address delivered by the late Professor Walter Smith, some ten years ago, on the occasion of the annual meeting of the Massachusetts Teachers' Association, held in Worcester, Mass.,* are here given, both because of their historical interest, showing, as they do, the genesis of the present popular movement for promoting the various phases of industrial education, and because they fully support the claim that such definite industrial training was included in the educational programmes of Professor Smith. It is hardly to be supposed, however, that while developing the purely industrial features as thoroughly as do the present promoters, Professor Smith would have suffered the art part of his programme to fall into desuetude. This ignoring of art, this failure to awaken and educate the perception of beauty, and to teach the pupils to know something of the true standards of taste, this predominance of the merely useful, practical industries, valuable as is such training, must, if care is not taken to retain and develop the art part of the programme, lead to results far below the aims set for themselves by the first promoters of Industrial Art Education! Philbrick, Perkins, and Smith sought to do much more than to train a generation in the knowledge of manual industries only; they sought to create a race of art-lovers and art-workers. To-day, the carpenter's bench, the blacksmith's forge, the sewing and cooking classes, threaten to banish all thoughts of man's ideal nature and of the divine beauty of art, from the consciousness of the child, and to intensify the practical, material side of the American character.

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* "Industrial Education and Drawing as its Basis. Address delivered at the Annual Meeting of the Massachusetts Teachers' Association, at Worcester, December 28, 1878, by Walter Smith, Art Master, South Kensington, England, Director of Drawing in the City of Boston Public Schools, State Director of Art Education, Mass., and Principal of the Normal Art School of Massachusetts. Printed by Request. Copies may be obtained on application to the Curator, Normal Art School, Boston, Mass. Pp. 31."

While it *is* desirable to give to all, manipulative skill, the need of awakening and developing the higher nature, the æsthetic as well as the reasoning faculties of the child, the love of beauty as well as the love of virtue, is no less imperative; rather more, since the whips of hunger and the scourging of the elements incite every human being to exertion to escape them; while the higher nature, which alone has power to lift man above the brute creation, has other needs than mere material wants, and must be aroused and nurtured during the formative years of life, else it will be overpowered by the lower needs of the body.

Professor Smith, it is true, claimed that all art must rest on a sure basis of science, since the artist must express his artistic conceptions in material forms; while the use of material is only possible in compliance with certain definite conditions, the correct knowledge of which is called science.

To captious critics, so-called "artists," who attacked his purpose in teaching Industrial Art Drawing to the children in the public schools, on the ground that his methods were contrary to the genius of art, since, as they asserted, art is a natural gift, not an acquired skill, and therefore it was absurd to attempt to teach it to all; he replied, often with ill-concealed contempt and ridicule, that sure knowledge of drawing was the only means by which any adequate expression of the painter's, sculptor's, architect's conceptions was possible; while it was also at the foundation of most industrial occupations, and that, up to a certain point, the knowledge of drawing required was the same; for which reasons he urged that a knowledge of drawing was valuable to every human being, and could be readily acquired by every normal child. But however much he may, in such controversies, have made use of ridicule as a proper weapon against certain persons who assumed that, because they claimed to be artists, therefore, they were competent to pass sentence of condemnation on his methods; he never, for himself or his pupils, ignored the supreme value and importance of art. He taught his pupils to see and love beauty, and he pointed out continuously the "reasons why" one work was beautiful and another ugly; how one work was an embodiment of true art, while another was but a degradation of all art.

In this way, while not expecting or desiring to make many professional artists, he did expect to train the majority to look for beauty in nature and in art, and to *recognize* it when they met with it; which is a far less common knowledge than people generally would like to admit.

In the intensity of the present movement to teach industries, in the pressure of needs which appeal to all charitable women and men, the imperative demand for the kind of knowledge which will procure food and clothing, is in danger of driving out all thought of making provision for the hunger of the immortal nature. It is to remind all that both needs can be met at the same time; that Industrial Art Training will meet both, and will enable the pupil better to combat with the world than any mere inartistic industry can possibly do, that these few words are written.

IV.

INDUSTRIAL EDUCATION, AND DRAWING AS ITS BASIS.

*AN ADDRESS BY WALTER SMITH.**

Within the memory of people now on the earth, some of whom being alive are capable of noting the fact, there have been considerable changes in many things.

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Perpetual change seems to be the law of nature, as inflexible as the law of gravitation, and though the most merciful changes are sometimes so gradual as to be almost imperceptible to us, yet there is no halting-place between the cradle and the grave for us, either in the changes which we are causing, or those which we are undergoing. * * * There is a wholesome and healthy love of change, which recognizes the necessity of transformation as a natural law, without claiming for it the virtue of a new inspiration, or condemning all other revelations.

Healthy people are always growing, and feel the divine irritation of growth, either physically or mentally; and it is the surest sign of disease and decay when human creatures cry out only for rest, and permission to doze away into the region of perpetual slumber, crying out all the time, "Let us alone."

Let us, therefore, recognize that it is human nature, healthy human nature, to be alive and moving; that to be stagnant and averse to change is death like, and that the golden mean is to accept the inevitable cheerfully, and try to grow all the time, respecting the past and hoping for the future, modestly desiring that our best work may be acceptable and that for all weakness and deficiency we may be charitably forgiven. This view seems to be consistent with the recognition of change that is progressive, and the permanence of that which is excellent in itself.

I have been lead into this train of thought by a somewhat prolonged study of the actual present condition of education in this country, and by a careful analysis of some of the practical results of education as displayed by the nations of the world in the Paris Exhibition. The conclusions come to by a practical observer may be of some interest to you, and therefore I will ask you to excuse the imperfect manner in which they may be presented to you, for the sake of that which I shall have to say.

THE TEACHER'S OFFICE.

And firstly, I know that I shall not ineffectually appeal to your indulgence for permission to say something on behalf of the teacher's office and character, for if it be true that "as is the priest so are the people," it is equally true that "as is the teacher so is the education."

I think it can be demonstrated that many of the failures and difficulties which society suffers from, and by which education is injured, are distinctly traceable to the very indifferent, if not erroneous opinions, generally held about the position of the teacher; and it seems to me to be the duty of those who feel this to be true, to say so, as modestly as they can, but as firmly as they know how. * * * Let me, then, remind you of a wise old saying which runs thus:

"Greater love hath no man than this, that he lay down his life for his friends."

I know of no higher way in which we can testify our respect and regard for an object, or vocation, than by laying down our lives for it, either by one great heroic act of self-devotion, in the jaws of death if need be, or by a long life of daily duty, consecrated to the work which our hands have found to do, conscientiously and lovingly laying down our lives as the most cherished offering we can make to our God and our country—and the most perfect expression of our greatest love.

The vocation of a teacher offers us the opportunity of doing this, in the most exalted manner; for neither the bar, the pulpit, the platform, nor even the press, is so powerful for good or evil as is the school-room and its influences. At a time when the human character is sensitive and unfolding, it is placed under the influence of the teacher to mould it into shapeliness or misdirect it into moral ruin; and this mighty influence should be wielded with a sense of awe and responsibility that ought to crush out every unworthy thought or act from a teacher's mind and life.

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* For title of this address see foot note on page 953.

That many teachers share in this thought and feel this great responsibility we all know to be the case, for many a saintly or heroic life may be traced to the inspiration and example of a teacher, whose life and soul have been consecrated to the work of the school-room. But that this habit of thought, as a qualification for the vocation of a teacher, is not invariably looked for by society, nor among the requirements of school committees, is proof that the absence of it is no bar to employment. Yet I unhesitatingly assert, that men who do not feel the great moral responsibility of being teachers, or who do not regard their occupations as being worthy of the brightest intellect and the most devoted lives, or who are teaching school as a mere temporary occupation, are not fit to be teachers at all. * * *

Reverting to what has been already said on the subject of change, it is apparent to me that there must come great changes in our time in the whole field of education, and that we must either take part in them, or be superseded by them.

Mr. Smith here refers to the exhibitions of England in 1851, Paris in 1867, and Philadelphia 1876, and shows that, as England at the first was behind other nations, but by the definite education of her workers has recovered her relative position; so now, the United States was seen both at Paris, and Philadelphia, to be far in the rear in all artistic manufactures. He urges, further, that a general realization by the people, of this relative inferiority, would be the first step in the upward progress of the nation towards the acquisition of such artistic skill. He then says:

This is where the subject becomes interesting to us as teachers. If the present condition of American manufactures is unprofitable and discreditable; if skilled labor cannot, under the present educational dispensations, be produced in this country and has to be imported, and the enormous importation of the products of skilled labor from abroad is not to be continued, discouraging as it does the native workman and impoverishing the whole country, then it comes within the province of a more developed and practical education to provide the remedy; and I take it that we, as teachers, have something to do with this matter. I know that microscopic politicians have persuaded the long-suffering public of this country that teachers ought to have nothing to say about education; but I think they should have, and am going on to say my share, in spite of all the politicians who are not yet translated.

To whom should the public look for information about education, if not to teachers? If teachers are timid or dumb, can they complain if education suffers? Two-thirds of the general literature of education is inflicted upon a docile public by plausible theorists who never strayed even by accident into a class-room; who boldly seize the chart and compass to navigate our ship on a sea they never saw, and by observations they never took. Brethren, it is high time that teachers should begin to teach, and not leave themselves and the public the victims of theoretical experimenters, who are not even yet in the early days of their apprenticeships to a very complex business. I notice that this latter-day cry for oral instruction only, and abolition of text-books, comes from such people, who, nevertheless, have no intention of touching this burden with so much as one of their little fingers. Such cries are dangerous to progress already made, and are like newly discovered short cuts, which are proverbially long roads. Young enthusiasts just beginning to sense the power which is new to them; ancient fabrics set on fire for the first time and burning with a consuming fierceness; extremists who, by exaggeration, make the mildest virtues into aggravating vices, all by their intensity bring a good thing into disrepute, and have to be tempered by moderation, and cooled down into steady and unexcited service. Oral instruction is necessary to every good teacher, and the younger the pupils the more it is essential to their happiness and progress, but you can no more abolish text-books for proper use in day schools than you can banish them from universities or technical schools for adults. And there is as much danger to be feared from oral instruction without text-books as is found in the mechanical use of text-books without the life of oral instruction. Every good teacher approves of a due proportion of oral instruction, and practises it, regarding it as the brightest and keenest weapon in his armory; and uses text-books also to make his work stick, and sustain him and his pupils, in weak moments, at the standard of their best. No good teacher avoids it, or goes fanatically insane about it, either for or against. He knows that if you deliberately abolish text-books, and call upon teachers to depend upon oral instruction only, not occasionally, as it is now, and always has been practised, by good teachers, but as proposed by fanatics, namely, for five hours a day on five days in the week, you will kill all the good teachers in a month, leaving alive only the sticks who are skilled in the art of self-preservation, who never teach at all, orally or otherwise, and therefore never wear out, to comfort you in your solitude among the graves of those you have destroyed.

Suppose, for example, you were to try this wholesale oral experiment on ministers in churches. Make them preach without manuscript, and insist on their congregations singing without hymn-books, the preachers to change their subjects every hour, not for one hour a day, but for five hours a day, not only on one day in the week, but for five days in the week, to a congregation of lost souls, every one of whom has been born an infidel, and is in dire need of conversion. The clergy are good, self-sacrificing men; many of them approve of this idea *for schools*, and would doubtless not object to having it practically tried in churches. When strong men and adult pupils have been proved to be able to endure this strain and are improved by it, it may, without cruelty and iconoclastic stupidity, be fair to try it on weak women and infant scholars. If experimenters will begin there, they will find that in a year many pulpits and churches have been many times over thus emptied, and many graveyards and asylums filled, and the fragments of congregations left will declare that their works do follow them. In mercy, then, begin with ministers and churches, because all concerned will be able-bodied adults and likely to exercise free-will to defend themselves; then, if it succeeds, we may try it on teachers and little children in our schools, without being guilty of Herod's crime, or breaking all the commandments at once for educational purposes, as Moses did.

THE INDUSTRIAL ELEMENTS IN EDUCATION.

What I want to say to you, and through you to all whom it may concern, is, that unless the technical education of the producing classes in America is provided for better than it is now, that is, general education in the elements of art and science for every child, and in the practice of industrial skill for youths and workmen, all the great natural advantages of this country in extent and variety of native products will be neutralized and destroyed.

I would impress upon you that this is a question of general, and not of special, education. The establishment of special industrial schools only, which, after all, is only patchwork veneering, and remedial, not organic and preventive, will not meet the difficulty. That has been tried and failed, and will do so again. You did not dispel illiteracy and ignorance by educating one-quarter of one per cent. of the population, but by teaching all; and you will not by any system of special industrial schools that a community will willingly support, be able to educate even so small a percentage of the whole people as that very insignificant fraction, nor accomplish more for industrial skill by them than the education of a few monks in the middle ages did for the general education of the people, without common schools. Our general education must include the elements of art and science, taught to every child in every school during the whole period of school life, and in reasonable proportion of time to that devoted to other profitable subjects, before special industrial schools are aught but playthings, which they have been and will continue to be whenever and wherever they have been established, without the preliminary preparation for them has been provided in the common schools.

There is no country in the world to-day that can absolutely ignore public education in art and science without becoming impoverished. There is none, inhabited by white races, that has made so little provision for it as we have; and, as a consequence, no other country imports so large a proportion of the products of skilled labor as America; and that means a national leakage where there should be a spring of wealth; raw materials exported, manufactured goods imported; pennies-worths' sent away, to pay for dollars-worths' brought here. It seems perfectly unaccountable, that, whilst the general education of the people has been so admirably provided for, even if too limited in scope, through being too exclusively literary and theoretical, and the technical education of the professional classes developed in the most complete manner, yet, though apprenticeships to trades have gone out of fashion, the artisan and mechanic are left without technical education, and, generally speaking, the American workman has to work by rule of thumb. Yet, so it is. I invite those who do not like this condition of things to remedy it.

Whilst you cannot find in any country a body of men with more average intelligence and brightness than American mechanics, you can find none with so few opportunities of improvement, in their several crafts, by education.

As a consequence, our public taste and industrial skill are about in a similar position as the same were in England in 1851. If we are to make a change as radical and complete as was made in that country, we must adopt similar means; and if the political economists are wise in their generation, they will find that there is no time to be lost in providing technical education for working men.

DRAWING, THE TRUE BASIS OF TECHNICAL EDUCATION.

Here I am tempted, and not unwillingly, to make a distinction in your minds between that drawing as an element in education which is the true basis of all technical education, whether used as a language, a weapon, or an interpreter, because it is the only mother tongue common to all men, and that other plaything of the past called picture-making, against which mock heroes and heroines rave and rage in true Quixotic fashion, confounding the two distinct things, and condemning them both because one was useless. Without a particle of knowledge of the subject, even mere popularity hunters, whose notoriety is fading, will elicit the resurrection of a little ignorant enthusiasm against drawing, by condemning something they miscall drawing, but which is really only the discarded toy which used to be called drawing; and in my experience, no branch of the real drawing which we teach now so rouses their ire as that upon which scientific progress is based, geometry and geometrical drawing. I have been called by every sort of bad name, because I have insisted that Science is the true foundation of Art, and have conducted, and now conduct, the Normal Art School of Massachusetts, upon that axiom, as a corner stone. It matters not whether the art be fine art, or industrial art, it is equally true of both, and this view which has been criticised by some men called artists, because they paint and sell pictures, but who never drew anything correctly in their lives, and never will whilst they are utterly ignorant of science, meets strong confirmation in the words of Herbert Spencer.

He says: "Unexpected as the assertion may be, it is nevertheless true, that the highest art of every kind is based on science; that without science there can be neither perfect production nor full appreciation. * * * Only when genius is married to science, can the highest results be produced. Science is necessary, not only for the most successful production, but also for the full appreciation of the fine arts."

This which is true of fine art is more than true of industrial art and art education, for the scientific element in it distinguishes the true from the false, the useful and the fruitful from the useless and the sterile. I have endeavored to make this matter simple by the following statement; one of a series drawn up for the guidance of teachers:

WHAT A KNOWLEDGE OF DRAWING SHOULD COMPRISE.

"Good industrial art includes the scientific as well as the artistic element; science securing the necessity of true and permanent workmanship, art contributing the quality of attractiveness and beauty. The study of practical art by drawing should, therefore, comprehend the exactness of science by the use of instruments, as in geometrical drawing and designing, and the acquisition of knowledge of the beautiful, and manual skill in expression, by freehand drawing of historical masterpieces of art and choice natural forms."

Geometrical drawing is but the interpretation and application of mathematics to industry, bringing the abstract truths of science to the concrete form of service. For which reason the most distinguished American art critic has said that over the door of every workshop in this land should be written the old Greek inscription, "None but the skilled in geometry can enter here."

Now let us see what Herbert Spencer also says about the practical value of mathematics, which, let it be remembered, can only be applied to the purposes he describes through the instrumentality of drawing, in the hands of the architect, engineer and designer, whose work becomes only possible of execution through the skill and taste which drawing alone can give to the mechanic and artificer:

"For all the higher arts of construction, some acquaintance with mathematics is indispensable. The village carpenter who, lacking rational instruction, lays out his work by empirical rules learnt in his apprenticeship, equally with the builder of a Britannia Bridge, makes hourly reference to the laws of quantitative relations. The surveyor, on whose survey the land is purchased; the architect, in designing a mansion to be built on it; the builder, in preparing his estimates; his foreman, in laying out the foundations; the masons, in cutting the stones, and the various artisans who put up the fittings, are all guided by geometrical truths. Railway-making is regulated, from beginning to end, by mathematics; alike in the preparation of plans and sections; in staking out of the line; in the mensuration of cuttings and embankments; in the designing, estimating and building of bridges, culverts, viaducts, tunnels, stations.

And similarly with the harbors, docks, piers, and various engineering and architectural works that fringe the coasts and overspread the face of the country, as well as the mines that run underneath it. Out of geometry, too, as applied to astronomy, the art of navigation has grown; and so, by this science, has been made possible that enormous foreign commerce which supports a large part of our population, and supplies us with many necessaries and most of our luxuries. And, now-a-days, even the farmer, for the correct laying out of his drains, has recourse to the level—that is, to geometrical principles. When from those divisions of mathematics which deal with *space* and *number*, some small smattering of which is given in schools, we turn to that other division which deals with *force*, of which even a smattering is scarcely ever given, we meet with another large class of activities which this science presides over. On the application of rational mechanics depends the success of nearly all modern manufacture.

The properties of the lever, the wheel and axle, etc., are involved in every machine. Every machine is a solidified mechanical theorem; and to machinery in these times we owe nearly all production. Trace the history of the breakfast roll. The soil out of which it came was drained with machine-made tiles, the surface was turned over by a machine, the seed was put in by a machine, the wheat was reaped, thrashed, and winnowed by machines; by machinery it was ground and bolted, and, had the flour been sent to Gosport, it might have been made into biscuits by a machine.

Look round the room in which you sit. If modern, probably the bricks in its walls were machine-made; by machinery the flooring was sawn and planed, the mantle-shelf sawn and polished, the paper hangings made and printed; the veneer on the table, the turned legs of the chairs, the carpet, the curtains, are all products of machinery. And your clothing—plain, figured, or printed—is it not wholly woven,—nay, perhaps even sewed by machinery? And the volume you are reading; are not its leaves fabricated by one machine and covered with these words by another? Add to which, that for the means of distribution over both land and sea, we are similarly indebted. And then let it be remembered, that according as the principles of mechanics are well or ill used to these ends, comes success or failure,—individual and national.

The engineer who misapplies his formula for the strength of materials, builds a bridge that breaks down. The manufacturer whose apparatus is badly devised cannot compete with another, whose apparatus wastes less in friction and inertia.

The ship-builder adhering to the old model, is out-sailed by one who builds on the mechanically justified wave-line principle. *And as the ability of a nation to hold its own against other nations depends on the skilled activity of its units, we see that on such knowledge may turn the national fate.* Judge then the worth of mathematics."

If this be true, and knowledge of the kind described and the skill which comes out of it be as important to us nationally, as is alleged, then we should begin to see that drawing is by far the most practical and most profitable of all the subjects taught in our common schools; for through it alone, as the concrete form of mathematics, can this knowledge and skill be acquired by the masses of the people. I commend this to the thoughtful attention of persistent chatterers, who describe drawing as an "ornamental" study which practical people cannot afford.

VALUE OF CRITICISM ON INDUSTRIAL DRAWING.

In this matter teachers are pioneers, which in education is the modern secular name for the early Christian profession of the confessor, who bore testimony through tribulation to his faith. Both encounter trials and persecution, and to both there is now and has ever been the encouraging prospect of a reward for constancy and perseverance, of being finally elevated to the crown of martyrdom.

It seems to me, that well-meaning persons interested in this subject, and anxious to be useful and just in their work and views, when divided into the two sections of teachers and critics, are apt to oppose and misrepresent one another when they practically want and aim at the same thing. It may be as well, therefore, to state most emphatically, that the employment of art and science as an element in general education, because of their intensely useful natures, both esthetically and practically, is altogether a new development, in its universality and significance, here and elsewhere, in which we are all beginners, whether as teachers or as critics. The men who are hard at work upon it in the class-room or on the platform, honestly desiring to be useful and willing to learn by experience, should not be hampered and hindered by the carping of mere speculators without experience, day-dreamers who have visions based on nothing, and theorists whose specifics have never been tested. On the other hand, those who are in the thick of the fight cannot see how the battle goes, nor ought they to complain of the judicial and competent criticism of those who mean well to them, but who do not know enough to understand it. There is a distinction to be made between such criticism and that of incompetent and merely spiteful, jealous, or ignorant fault-finders. A hard-working teacher, toiling and moiling with a strong heart and heavy load, has, and ought to have a supreme contempt for the buzzing and booming of these frivolous flies, who think by settling on the wheels of the chariot to impede its progress by humming; whilst, he should treat with respect the honest opinion of those who, differing from him in details, still put their shoulders to the wheel and help.

So that whilst critics have neither history nor precedent in technical educational experience, by which to judge our work, and, therefore, their assaults are mere explosions, not directed fire, having little foresight and no hindsight, teachers must also realize that they themselves are pioneers, whose highest qualification for their work is their ability to learn and make history, and establish precedents in virtue of this ability. If both agree as to aim and object, however much they may differ about details, progress will be speedy; if one assumes omniscience and the other claims infallibility, progress is impossible. But if between conflicting opinions, the public, without being skilled in the subject of controversy, has to choose which service it most needs, that which is constructive and serves as well as it knows how, or that which is destructive only and assails, there can be no question that, as half a loaf is better than no bread, the public will be better off with a modest half loaf of service than with the paper bill of fare offered to it by the critics, and written in gall or poison.

HOPEFUL SIGNS.

The interest arising in industrial art and art education throughout the length and breadth of this land, far more general and active than that which is felt in fine art, encourages us to hope that before long we shall witness a general advance along the whole line of secondary education. It is badly wanted. The budding signs of an artistic maturity, the forerunners of something that will become a just pride in the future, are not absent from the present average condition of American society. Premonitory symptoms of a return to the organic love of the beautiful, which in the infancy of our race built the shrines and cathedrals, are evident on all hands. We see indications of it in the art-manias which periodically attack our most sensitive and refined people, the visible results of which are not so valuable in themselves as in the evidence they furnish of a life that still exists for a purpose. Thus we have safely passed through the blacking-bottle-decoration period, if not without a scar, yet without permanent disfigurement; the mysteries of China-painting and of over-glaze and under-glaze, (in the throes of which many of our best and fairest, unlike their prototypes, nave toiled and spinned,) have been explored, and their inner depths sounded without danger; the South Kensington stitch and female pedestrianism have been attacked and defeated coevally, by our esthetic and physical athletes, and the doctors who have watched their patients through these mild attacks elsewhere say we shall be the better for them when the crises are over, for though difficult to bear whilst they last, they are symptoms of our excellent constitution. These infantine troubles, like the cutting of teeth, measles or whooping cough, apparently cannot be avoided, must be gone through, and are not dangerous if allowed to run their courses and are not interfered with. When they have taken their places as strata in the formation of our progressive civilization, we may, perhaps, be strong enough to give up the importation of pagan or heathenish monstrosities, playing with every plucked flower that floats to us from foreign sources, for the gratification of our refined taste; and then begin to patiently toil at the radical work of education, to develop our own resources, which is a necessary condition for the growth of organic, Christian, American art. When people of wealth and leasure encourage and buy native American art-products from working-men and women, and give up playing at weak amateur patronage and performance of esthetic tricks in skilled craftsmanship,—the faint echoes from the other side of the oceans of real living arts existing there,—it will be better for everybody, the producer, the possessor and the race. Whilst our adults are thus harmlessly playing with these borrowed plumes, it is for us to lay deep and broad and strong the foundation of a refined national taste, by the art education of all our children. Neither civilization nor skill was ever yet grafted upon a race, as a tree is grafted; it must come as a tree grows, from the seed, and draw its nourishment from the soil which gives it both life and character.

After working and speaking and writing on this theme of industrial art for the last seven years in this State, and having my conclusions strengthened and supported during the last half-year in Europe, from observations personally made there, I find it very refreshing to see, in the last report, just issued, of the Boston School Committee, the following trenchant passage:—

"The question of teaching trades in our schools is one of vital importance. If New England would maintain her place as the great industrial centre of the country, she must become to the United States what France is to the rest of Europe,—the first in taste, the first in design, the first in skilled workmanship. She must accustom her children from early youth to the use of tools, and give them a thorough training in the mechanic arts."

That, in my humble opinion, is the most important utterance yet made on the subject of technical education in this country; and if every school committee in New England would not only utter but adopt the sentiment, and act upon its conclusions, the one great educational need of the country would soon be remedied.

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This is not said in reference to a few of her children,—picked geniuses, whom not even an infallible Pope could choose in their teens,—but all her children; and the term, "mechanic arts" has the broad significance of the words, "industrial arts," creative and productive, not distributive.

As this also is not done now, here is more work for the future, and equally radical and important in its character. Then, "to maintain her place, New England must become the first in taste, the first in design, and the first in skilled workmanship."

You will observe the expression, must *become*, not be as she is, but *become* so in the future. It ought to be remembered, in this connection, that the above language is employed by a body which has already done more to bring about the objects described than any other representative body in the United States; and this expression of what should be sought for in the future seems to me the most hopeful and far-seeing sign and indication that has appeared in the whole educational field, coming from a body which has already done so much.

I honestly believe that it is necessary to the welfare and prosperity of this country, that such views should not only be held, but carried into execution. How, when, and where, are matters of detail upon which opinions would differ, but they are not beyond the power of judicious counsel to solve.

Probably some school-masters, of conservative tendencies, would be shocked at so radical a measure as teaching the use of tools in some of their class-rooms; and I once heard the master of a school in a beautiful new building, declare that he should oppose the use of a part of his school for a night-class of any sort, because he was afraid the evening students would dirty the steps at the entrance to the school with their boots, in bad weather! I submit, however, that in such a matter we are the servants of the public, and not their masters; and if, for cogent public reasons, it be found necessary to engraft the elements of technical education both upon the day-schools and in the establishment of night-classes, we ought to be ready to co-operate with the movement,—for dirty boots and clean; in fair weather and in foul. If we are not so ready, the sooner we are gathered to our forefathers, the better it will be for everybody, excepting, perhaps, our unfortunate forefathers.

MAKING USE OF OPPORTUNITIES AND EXPERIENCE.

If we turn from a contemplation of the achievements of European nations in imparting value to their great industries, through education, to inquire what we are doing in the same direction in the United States, where our youths do not even have the discipline and benefit of apprenticeships, the prospect is indeed a gloomy one, for the field is almost bare.

Yet our opportunities are as great as those of European nations, with the single exception of the possession of museums and picture galleries, a want soon to be supplied.

We have as good teachers and as good school buildings as they have anywhere, and all we have to do is to utilize them. Where our teachers have had the opportunity given to them to learn and teach drawing, they have learnt it, and are now teaching it more successfully than it has yet been taught in any European country.

In this matter I know whereof I affirm; and my belief is, that the same result would follow if they were required to teach the elements of science, as that which has transpired from their instruction in the elements of art.

I have been more than encouraged by the results of our labors in the subject of drawing, during the seven years I have lived and worked in America, and say emphatically that if you give American teachers a chance, they can do anything, and do it well, that comes legitimately within the province of public education. We have, in Massachusetts, solved one very important problem. To the vexed question of whether drawing can be taught by the regular teachers to all pupils, we have found an answer of the most conclusive kind, by doing it, and doing it well. The matter has been settled finally for all who are open to conviction, in many cities and towns of this State, and probably in others of many other States. In addition to this, I am enabled to say from my investigations whilst abroad, that in no other country of the world besides America, is the subject of original design taught in all the grades of public schools. Nor do I believe that it is taught so well, even in the grades or countries where it is taught at all, and they are few. Exercises in original design produced by pupils in one of the public schools of this State, were taken by me this year to Europe and submitted for criticism to some of the most distinguished art-masters and critics. They were executed from the instruction of the regular teachers, by pupils who averaged less than fifteen years of age, and no special teacher of drawing had ever seen the exercises until they were completed. They were not picked, but every exercise done in the classes was there, and, as I happened to be present at the examination when these drawings were made, I saw them produced with my own eyes. These works excited the greatest astonishment and admiration of all who saw them, and they were many and competent judges. The opinion formed of the regular teachers of American schools was more complimentary than I can describe to you, without hurting the feelings of those who have never tried to teach drawing, though it was very gratifying to me to hear those opinions expressed. And as a consequence of what I saw and heard, I do not hesitate to say, that to-day this subject of industrial drawing is better and more systematically taught here in some of the public day-schools of Massachusetts, than it is in any European country, not excepting France nor England. The great trouble is that though it is so well taught, it is not taught in all places, and in every class-room, in every town or city. The law of Massachusetts says that drawing shall be taught to every child; and yet many school committees, and teachers too, say that they do not teach it because there is no penalty attached to a breach of the law! In my opinion, people who only keep the laws when the police are about, are utterly unfitted to have anything to do with the education of children.

I can sympathize with and respect any one who tries to do something good and fails, though I never knew a teacher who honestly tried to teach drawing who did not succeed; but if there is an unpardonable sin, it must be that which is committed by the people who are elected by their fellow-citizens to bring up the children of a community as law-abiding creatures, and set them the example of open defiance of the laws.

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CONCLUSION.

Fresh from a contemplation of the world's civilization as displayed in the Paris Exhibition, I can say with confidence that if we are wise enough to learn what other nations have learnt from previous exhibitions, and remedy the proved deficiencies of our education, by establishing technical or secondary education, there is no reason for anxiety about our country and its prosperity. But if we cannot learn this lesson, there is real peril in store for us. * * *

I wish that the wise words of the Boston School Committee could be heard throughout the length and breadth of this land, and that every live educator would closely examine into this question for himself. We cannot see the bearings of the matter if we limit our observations to the horizon of State, city, or village in which we may happen to live. To grasp the whole significance of it, we must know what has happened elsewhere than in our homes, and at other times than our own. The wisest people are not those who live only from hand to mouth, and see nothing but what they run their heads against.

Cautious and provident folks contemplate the future and prepare themselves for it. We must do so, and find profitable employment for our people, or we shall wax weaker instead of stronger, and our size will only make our ruin great and widespread.

In conclusion, there is one thing which I hope to be excused for suggesting. As a rule, teachers, the masters of public schools, keep sadly too much in the background when public questions are discussed, especially when educational matters are under deliberation for legislative purpose. It used to be said that there were three sexes—men, women, and clergymen. Is it possible that there are two sorts of *men*—citizens and teachers? Is it possible that the annual election of teachers makes it dangerous for the best educated part of the community to take men's parts in public business? If it is so, then for the sake of the manhood we hold from God, let us emancipate ourselves from a servility that is degrading, and do men's shares of public work.

I know that in the old country an ordained clergyman cannot become a member of Parliament, and it seems to me you believe that here an ordained grammar or high-school master cannot take part in public affairs without being dropped like an egg, and get into equally hot water. I say it *seems* so, judging from the way schoolmen hold back from their duty in helping to govern the country. But it would not be so if their public duties were manfully done, for education has its weight with both educated and uneducated people. These conventions of teachers are, or appear to be, very refreshing, but primary meetings are both creative and recreative."

V.

TECHNICAL TRAINING IN AMERICAN SCHOOLS.

BY E. E. WHITE, *President of Purdue University.**

INTRODUCTION.

The following statements of the proper functions of the common schools and of the claims of some forms of elementary industrial education to a place in these schools, are by one of the recognized leaders among American educators, who, both in addresses and published articles, has more than once reiterated the main proposition. These extracts are from an article published in "Education" for November, 1880, entitled "Technical Training in American Schools." The author, Hon. E. E. White, then President of Purdue University, of Indiana, subsequently, and at present, Superintendent of the schools of Cincinnati, Ohio, needs no introduction to the educators of the United States. He says:

> The American people are awakening to the importance of technical training, so universally recognized in the older countries of Europe. The rapid exhaustion of the natural fertility of our soil, the wonderful increase in the variety of our manufactures, and the marked improvement in the taste of our people, largely the result of general education, all demand higher technical knowledge and skill on the part of the American workman.
>
> This increasing demand for better work has been attended by a steady decline of the apprentice system, which hitherto has been our chief reliance for the training of artisans. It is becoming more and more evident that if this decay of apprenticeship is not made good by technical training, in some efficient form, the American manufacturer will be at the mercy of the skilled labor of Europe. * * *
>
> The necessity of technical training being conceded, how can it best be provided?
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> * * *
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> ### FUNDAMENTAL PRINCIPLES UNDERLYING PUBLIC EDUCATION.
>
> A concise statement of a few of the fundamental principles involved may not only avoid misunderstanding, but may shed a clear light on the question before us.
>
> 1. The State has a right to teach any branch of knowledge that will promote the public welfare. This is the broad proposition on which public education rests. The attempt to draw a line through education, and deny the right of the State to cross it, is illogical and futile. The State has either the right to teach all branches of knowledge, or it has no right to teach any branch. There is no middle ground.
>
> 2. The right of the State to teach all knowledge does not necessarily make such instruction its duty. The right to teach is one thing, and the obligation to teach is another. The duty of the State in education is limited by its ability. It cannot teach all persons all knowledge, and it is not its duty to attempt it. When the teaching of one kind of knowledge necessarily excludes more important instruction, the State is released from obligation to teach such knowledge. If it has not the ability to cover the whole ground, it becomes its duty to give attention to the more important and useful.
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> 3. The duty of the State to teach is also conditioned by necessity. The State has no monopoly of education. The church, the family, and the individual have also the right to teach, and every human interest may organize and support schools for

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* The Indiana College of Science, Agriculture, and the Mechanic Arts.

its promotion and benefit. When needed instruction is or will be given by other agencies, the State may or may not provide it. Its concern is to see that such necessary instruction is efficiently given.

4. The primary and imperitive duty of the public school is to provide training and to teach knowledge of general application and utility. It recognizes no class distinctions, social or industrial, but provides a general education for all classes of youth. It is a *common* school, a school designed to impart a common education,—an education open to all and useful to all.

This primary function of the public school is of the highest practical importance and value. Its comprehensive aim is to prepare the child to discharge the duties and meet the obligations of coming manhood, including his relations to the family, society, and the State,—relations involving the highest and most important activities of civilized life. In performing this function, the public school assumes that every child that crosses its threshold to receive instruction is to be a man, and that his first and highest need is to have all the elements of manhood within him developed, quickened, and energized. The first element in this elementary training is character, and the second is intelligence,—moral and intellectual furnishing and force.

5. The public school, as above defined, exhausts neither the right nor the duty of the State in education. The State may establish higher institutions, and it may organize or encourage special schools to promote important industries or to meet the wants of classes. It has the right to supplement the public school by special schools for technical training.

MAY TECHNICAL EDUCATION BE TAUGHT IN PUBLIC SCHOOLS?

We are now prepared to ask whether any technical instruction can be provided by the public school without subverting its primary function, without sacrificing the more important and imperative for the less important and the incidental.

The elements of technical knowledge which are of general application and utility may clearly be taught in the public school. These may include instruction in industrial or mechanical drawing, the practical applications of geometry, the keeping of accounts, the elements of the physical and natural sciences, modelling in clay, and those elementary mechanical processes which may be made an efficient means of general training. Such instruction is not only the basis of technical training, but is of great value to all youth, whatever may be their future occupations and positions in life. It is useful as a general preparation for *all* pursuits. Time for this instruction may be gained by reducing the time hitherto devoted to several other branches of study. This has been done in many schools without loss, and the adoption of truer ideas and better methods of teaching would make it possible and feasible in all.

The technical instruction above indicated may properly be called *general*, in distinction to that which relates to a particular trade or pursuit, which is *special*. Special technical training involves the use of the tools and other appliances of given trades and occupations. In the mechanic arts, it includes what is known as "handicraft,"—skill in the use of tools, machinery, and material. Its purpose is not general training, but special preparation for a special pursuit.

Should this special technical instruction be made an integral part of the work of the public school? In the light of the principles above stated, I unhesitatingly answer, *no*. It is not the duty of the public school to teach trades, and an attempt to do this work on an adequate scale would subvert public education from its primary purpose, and end in disappointment and failure. The sooner this is understood and accepted, the better for both industrial and general education.

OBJECTIONS TO TEACHING OF TRADES.

Several objections to the teaching of trades in the public school may thus be stated:—

1. It is impossible for the public school to teach a tithe of its pupils the pursuit or occupation by which they are to earn a living. A glance at the list of occupations given in the report of the census of 1870 will satisfy any one that but very few of the three hundred and thirty-eight occupations therein named can be made a part of the public school course. Of the one hundred and seventy-two occupations classed as "Manufactures, and Mechanical and Mining Industries," not a score can be taught in a school-shop, and but few of these can thus be taught with any efficiency. * * *

2. The teaching of a few trades to all pupils would crowd these pursuits with workmen, and reduce the compensation of skilled labor therein to the wages of common

laborers. The turning of the pupils in the public schools of our cities and towns into a few channels of industry would glut these occupations, and leave many skilled workmen without employment. The training of all the boys to be carpenters and blacksmiths, for example, would be worse than industrial folly. Not a tithe of them could earn a living as hand-tool mechanics. Handicraft is fast disappearing, and more and more mechanical work is done by machinery. The coming artisan will be the master of the machine, as has been clearly shown by Prof. Thompson, of the Technical School at Worcester, Mass. The teaching of handicraft in the schools would give nine-tenths of the pupils skill which they would never use in after-life, or use only incidentally.

* * * This objection does not apply to the training of pupils in the use of hand-tools and in simple mechanical processes, when such training is made a means of *general* education,—the training of the eye, the hand, the mind, for educational purposes. Such training is not the teaching of trades or handicrafts, but is general technical training, the same as mechanical drawing, and, as such, has a place in the public school course. The extent of such training will depend on its value as an element of general education.

3. Another objection to a partial system of industrial training, the teaching of a few trades to a few pupils, is its manifest injustice. The public school can provide such special training only at the expense of its facilities and appliances for general education. Why should the value of the public school to the great majority of its pupils be lowered to teach trades to a small number of youth? Why should a few pupils be thus taught trades, and the great majority of youth be left without technical training?

The question has no satisfactory answer. The workshop cannot be put into the public school without a sacrifice of its efficiency as an agency for general education. Besides, the teaching of hand-tool trades to a few pupils in the public schools is mere playing with the great problem of industrial training. Every productive industry needs the assistance of special technical training.

This objection does not apply to the teaching of trades in reformatory schools, orphan asylums, institutions for the blind, the deaf and the dumb, etc. These are special schools for classes of unfortunate youth, and the pupils therein may be taught trades at the public expense, on the same principle that they are fed and clothed.

The three objections above stated show that the public school cannot wisely undertake the work of special techninal training. To do this, it must train all children for their respective future pursuits, or it must teach a few pupils chosen pursuits, and the objections to each of these courses seem to us to be conclusive.

Mr. White here quotes the extract from the report of the Boston school committee with Professor Smith's approving comments, as given in the preceding paper, No. IV of the present appendix, and controverts them both. He then says:

It may be true that every child of the requisite age should be taught to work while he receives his schooling, but it does not follow that this work should be supplied and directed by the public school. The family has something to do in the training of children, and a considerable portion of child-life is still under the parents' control. The public school has hitherto recognized this fact, and it has wisely not attempted to do everything which industry, religion, and civilization demand in the education of each generation. The public school cannot wisely be made the work-shop for the training of apprentices, but it can and should give such general technical training as underlies all industrial pursuits. The special instruction and practice needed to make a coat, shoe a horse, or build a house, should be left to the shop, or to some special trade school, properly equipped for this work. The public school has done its part in preparing youth for special pursuits when it has given them an efficient general preparation for all pursuits, and all industrial experience shows that the more fundamental and thorough this general preparation, the more fruitful will be the special training.

SPECIAL TECHNICAL SCHOOLS SHOULD SUPPLEMENT PUBLIC SCHOOLS.

What is needed is to supplement the public school with a system of special schools for technical or industrial training. * * * . The conditional offer of State or municipal aid would induce every important productive industry to establish technical or trade schools for the training of skilled workmen.

What is needed to secure a full development of this system of special schools is a popular demand for technical instruction, and this is coming. Experience is demonstrating the practical value of such training, and every important American industry will soon have its technical school, especially if the public school is held to its own legitimate work.

For the complete success of this system of industrial training the requirements of the public school should be so modified as to permit pupils over say twelve years of age to devote a part of each day to labor or to special technical training. I have long held that the interest of education and industry would be promoted by the adoption of half-time courses of study, running parallel with the present full courses and in the same classes. The half-time course should contain only the essential and more important branches of study, and the daily programme should be so arranged as to bring the instruction in these branches into a half-day,—either the forenoon or the afternoon. This arrangement would avoid the organization of separate schools for half-time pupils, and their consequent separation from other pupils; and, at the same time, it would afford the advantages of full-time schools without loss to those pupils who wish to devote full time to school work. The limits of this paper forbid the giving of details. It must suffice to say that such an adjustment has stood the test of experience in several of the German States. I received the idea from the school system of Bavaria.

AMERICAN PUBLIC SCHOOLS ARE NOT INDUSTRIAL FAILURES.

Permit me, in conclusion, to deprecate that advocacy of technical education which disparages the industrial value of general education, and more than hints that the public school is an industrial failure. If this be true of the public school, it is clear that neither industrial drawing nor instruction in sewing will prove an adequate remedy. But the public school is not an industrial failure. It has been and is the most effective of all agencies for the promotion of American industry. Its training touches both of the prime conditions of productive industry. It awakens desires, and incites and impels man to effort: enterprise and wealth are the results. It gives ingenuity to the mind and cunning to the fingers. Thought in the brain of labor is the alchemy of industry, turning everything it touches into gold. Intelligence and character are the two great conservators of wealth. Who can estimate the industrial value of the common schools of New England!

It is not claimed that the public school is doing its full duty in promoting the productive industries of the country. It should give a larger place in its course to general technical instruction; it should be pervaded by a more earnest industrial spirit; and it should do more to cultivate a taste for industrial pursuits and a respect for honest labor. These practical advances are more important than a weak attempt to make artisans.

VI.

MANUAL EDUCATION IN PUBLIC SCHOOLS.

INTRODUCTION.

Mr. L. H. Marvel, then Superintendent of the schools of Gloucester, Massachusetts, published in 1882 a pamphlet * giving an account of the experiment begun there through the liberality of Miss Marian Hovey, in giving industrial training to boys. The account gives, in detail, the lessons of the course, accompanied by four pages of illustrations showing the work done. This is preceded by some twenty pages on the general topic, with quotations from various educational authorities; also, an account of the Workingmen's School in New York, under the direction of Professor Felix Adler, with a detailed statement by Mr. Bamberger, then principal of the school, of the course of instruction; this is here omitted, as a more recent statement in regard to this interesting school will be found in the present volume.

After showing by historical data that the common schools of to-day are in no wise inferior but are, in fact, vastly superior to those of two generations ago, and that the need of some change in the form of public school training at the present day is largely due to the changed conditions of environment; Mr. Marvel says:

> The importance of manual training is admitted by educational experts as well as by practical "men of affairs." It is felt by the people, and attempts are made to secure such action as will remedy existing evils and supply deficiencies in the practical education of the pupils of the public schools.
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> In kindergarten culture the manual element is so prominent as to form a prominent feature of the work. The result of kindergarten training is such a harmonious development of the physical, mental, and moral capabilities of little children as no other system of education has ever secured. In a carefully-prepared address upon Elementary Education in London, Sir Charles Reed says: "The best infant schools are those where the *spirit* of the kindergarten has been infused into the whole teaching of the schools." The same results follow the introduction of kindergarten methods into American primary schools.
>
> From the kindergarten to the technical school very little is attempted, but in the technical schools some most satisfactory results have been attained.

A reference to the Technical Schools of the Worcester Free Institute and the Massachusetts Institute of Technology is followed by a succinct account of the work of Cooper Union; but the training given in the public schools is the subject in which our writer is most deeply concerned.

EDUCATIONAL NEEDS OF THE MAJORITY OF PUBLIC SCHOOL PUPILS.

> The mass of children in the public schools do not have the preliminary training of the kindergarten, and never pass into the technical and special schools. For them it is evident that the common school-work should include such manual train-

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* "Manual Education in Public Schools by L. H. Marvel. New England Publishing Company, No. 16 Hawley street, Boston, Mass. 1882. Ill. Pp. 34."

ing as will supplement education of the brain by education of the hand,—a natural development of such culture of the hand and eye as will lead to the best preparation for any form of skilled manual labor. "Each step, from the first, should be educational, and, moreover, should be taken in its proper relation to those which have preceded and those which are to follow. In the second place the idea of *construction* must be wholly ignored, while that of *instruction* takes its place. In the third place the class system should be introduced, whereby *one* expert, or teacher, is enabled to impart his instruction to *many* at the same time. Lastly, the object sought is not so much the power to do this or that specific thing, as the *trained* hand and eye, which shall give to their possessors the power to do anything within their capabilities."

HOW TO MAKE ROOM FOR THE NEW STUDIES.

One of the first objections which is urged against such a scheme is that the work of the schools is clearly over-crowded, and that there is not time for such education. But in half-time schools (i. e., schools where pupils work one-half the day and attend the other half), it is claimed that the intellectual advancement of the pupils is as great as in schools where all day is devoted by each pupil to the academic work. The intellectual training derived from skillfully directed labor is alleged to fully counterbalance the difference in the number of study-hours.

In schools where sewing is taught (sewing was taught in all elementary schools half a century ago, and to boys and girls alike), the testimony is essentially the same. All report that the sewing does not detract from the efficiency of the other work of the school, and all claim educational as well as practical value of the exercise. The following points have been made by different parties who have inspected and reported upon this work:

"Right beginnings will be secured by special attention, at first, to the posture of pupils, the proper holding of the work and of the needle, and the adaptation of the needle and thread to the material in use. With sewing, as in all branches of instruction, variety and interest are essential to success."

"The change from mental to purely industrial application during the school session affords a healthful recreation to children, without retarding the progress or diminishing the amount of necessary school-work. The training of hand and eye to precision in doing things which children can understand, and can see the immediate application of, is legitimate school-work, and is a long stride toward the object for which we strive in teaching writing and drawing."

All this clearly proves that a portion of the school-time may be profitably diverted from purely intellectual employment to some form of manual occupation, not only without detriment to intellectual culture, but as a factor for materially increasing its value.

The question, then, naturally arises, To what extent and in what direction shall this work be attempted? We no longer need ask, "Should manual training be attempted throughout the school-life of our children?" but, "How shall it be successfully and economically afforded?"

Since manual training has been successfully introduced in classes of pupils below and above the grade of the common schools, the question naturally arises, Why has so little been attempted in the regular grades of public schools attended by pupils from seven to sixteen years of age?

In Massachusetts there is legislative enactment permitting towns and city councils to appropriate money for industrial education, but the local authorities have been slow to avail themselves of its provisions. The first important movement tending to the development of a comprehensive scheme for manual training was the act passed in 1870, by which drawing was required to be taught in all the public schools. But it has taken a long time to develop in the public mind an appreciation of the kind of drawing required.

A KNOWLEDGE OF DRAWING MUST PRECEDE INDUSTRIAL TRAINING.

The idea that drawing is simply related to fine-art work is so general, and its relation to industrial labor is so little understood, that it has required much demonstration to make clear its practical bearing in industrial education. It is now becoming evident, however, that widespread instruction in drawing must precede any broad development of industrial education; for drawing is the fundamental language by which thought or ideas are conveyed in the industrial arts. As all artisans perform their work in accordance with certain plans, it is evident that a knowledge of how to construct and how to interpret these plans becomes a matter of prime necessity to all artisans. It is as essential that the builder shall know how to interpret the plans, or working-drawings presented for his inspection as that he shall be able to read the specifications which accompany them, or compute accurately the expense of material to be used. To him drawing is of equal value with reading, writing, and arithmetic; and the same is true of the mason, machinist, cabinet-maker, etc.

IMPORTANCE OF CONSTRUCTION DRAWING.

The system of instruction in drawing which has been adopted generally in this State, and may be noted particularly in the important cities like Boston, Worcester, Lawrence, and Lowell, has for one of its main objects the development of a knowledge of drawing as applied in constructive industry, or in industrial construction. It has been the mistake of nearly all instruction in drawing, until quite recently, that this feature has been almost, if not entirely, ignored. Hence pictorial drawing, or the drawing of objects, and the practice of designing in the schools, have received undue consideration. The attention now being paid to the subject of constructive-drawing will soon change the whole character of art-instruction in our public schools. Not only will it serve to make the study of drawing eminently a practical study; it will also tend to develop the purely æsthetic features which belong to the subjects of object-drawing and design much more educationally, and much more broadly, than has been found possible hitherto.

Instruction in drawing, therefore, when proper attention is paid to the feature of industrial construction, becomes a fundamental part of general industrial education; but it should be borne in mind that instruction in drawing which is limited to object-drawing and design, has but a partial or incidental bearing upon general industrial education.

The author then refers to the plates illustrating "construction" drawings, which are appended to the pamphlet, but omitted here.

PURPOSE AND METHODS OF THE PROPOSED INDUSTRIAL TEACHING IN SCHOOLS.

With the exception of instruction in sewing, provision for which is made in a few schools, no other line of manual training has been established at public expense in the common schools. The principal reason for this neglect is, that so few persons fully apprehend the scope and purpose of the instruction proposed. There is a very proper objection to making apprentices of the pupils, turning the schools into work-shops, and educating the children for special trades. Not realizing that the end sought is training and not trade, and not understanding that facility in manipulations common to all artisans may be secured without special apprenticeship at some particular trade, many persons have attempted to criticise the scheme of manual instruction while totally ignorant of the fundamental principles of the plans which its advocates suggest. It is by no means intended to make blacksmiths of these, carpenters of those, stone-cutters, machinists, printers, etc., of others; but to train all alike in a few manual operations common to all the trades, in order that there may be a normal development of the body as well as of the brain. The public schools are by no means designed to teach special trades; neither are they intended for special professional training. But they should furnish instruction as directly adapted to the wants of prospective artisans as to the needs of those pupils who propose to enter the learned professions. This has not yet been done. But those educators who have given the subject the most careful attention, and have satisfied themselves by experiment and observation of the truth of their statements, claim that there are certain fundamental operations,—*e. g.*, hammering,—essential to all trades, and of value to the several artisans, just as drawing has been shown to be valuable to many classes of workmen. Pupils over twelve years of age are generally large enough and strong enough to perform many of the manipulations which are required, and are sufficiently matured to understand the directions given. Without teaching a trade, the elements of the trades may be mastered, and the graduates of our public schools enabled to go out into the world the better fitted to take up ordinary lines of work on account of their school-training.

Professor C. O. Thompson, who does not favor manual education in elementary schools, emphatically states that, "Speaking now of pure manual dexterity, without any connection with invention or with auxiliary mechanism, I affirm, unhesitatingly, that the highest degree of this skill has been attained by attentive, unremitting, prolonged, concentrated, and enthusiastic practice of a few mechanical motions." This is said respecting the skill of the artisans in India, which excites the envy and admiration of the missionaries sent out to educate them.

Professor Felix Adler claims that, "There are certain mental operations that underlie manual operations. These children should be taught so that their manual operations may become transparent to the mental operations that underlie them.

In modern times capable men have discovered that there is such a thing as a theory of tools; that tools can be classified and grouped, and that a child's mind can be led along in orderly succession in learning them. It has been shown that there are three great types of tools, involving three great principles by which, and the combination of these principles, every kind of tools can be explained. There are reasons underlying manipulation; why an axe should be wielded in a particular way; why an axe splits, and why a knife cuts wood. The double-cutting edge of a plane exhibits a rational contrivance, and has an interesting explanation of its own. The children ought to be taught these reasons, and made to understand their explanation, even while they use the saw and wield the axe, strike with the hammer and move to and fro the plane."

These gentlemen, the former of whom does not approve the adoption of manual training as a portion of the regular *curriculum* of common schools, and the latter of whom is one of its most earnest advocates, substantially agree that the practice of a few fundamental mechanical motions is of vital importance in securing manual dexterity. Practice of using the left hand as well as the right would be of great practical benefit. While every one cannot become perfectly ambidexter, there is no valid reason why, by careful training, both hands may not be rendered nearly equal in strength, skill, and usefulness.

By special gymnastic exercises, or otherwise, these fundamental motions should be practiced regularly and daily in the public schools, (1) because of their value as a means of physical development; (2) because of their wage-earning value in after-life; (3) because no other place affords the facilities of the school-room for regular, systematic, enthusiastic practice.

Of the practicability and utility of such training, in the schools intermediate between the primary and High, he says:

If regular instruction were given in the use of carpenters' tools in the two upper classes of the grammar schools, and in the lowest class of the high school, followed by work in iron (forging, filing, planing, etc.) during the remainder of the high-school course, boys who would graduate from such a school after thorough instruction in mathematics, science, and modern languages, might, at the end of three years' practical work in the regular shops, upon attaining their majority, become the most efficient of master-workmen. They would be competent to construct, readily and accurately, from well-drawn plans, whatever might be demanded, and often enabled to originate valuable designs; while their knowledge of the laws of mechanics and the properties of matter would be of inestimable service to them if attempting important inventions of any kind. The earnings of such boys, for five years after leaving school at least, would be double those of the graduates of high schools as at present conducted; and this is by no means an unimportant item. The industrial training would furnish excellent mental discipline, as well as physical exercise, for any member of the school. It could not fail to be of great pecuniary advantage also, to pupils whose future occupation would require the employment of tools similar to those in the use of which they had acquired dexterity while connected with the public schools.

The general subject of the preliminary pages is summed up as follows:

In conclusion, the following brief summary of the points to be established is presented:

(*a*) There is a constantly increasing popular demand for results of greater commercial value from our educational system.

(*b*) Manual instruction can be afforded, not only without detriment to intellectual advancement, but as a valuable auxiliary to mental progress.

(*c*) There are certain fundamental operations which may be taught as the basis of all trades.

(*d*) The State has a right to afford such instruction.

(*e*) All experiments in the department of manual training are suggestive, and demand the attention of the most progressive educators of the country.

INDUSTRIAL EDUCATION AT GLOUCESTER.

In September, 1878, Miss Marian Hovey, one of the trustees of the estate of the late George O. Hovey, placed at the disposal of the school committee of Gloucester a sum of money to be expended for the industrial education of boys. Provision was made for the instruction on Saturdays, of four classes of twelve members each, in the use of some of the tools employed in carpentering. Mr. C. H. Dow, a practical carpenter, was engaged to instruct the classes.

In October, 1880, arrangements were made to accommodate pupils in the carpentry class one-half of each afternoon session on Monday, Tuesday, Thursday, and Friday of every week (two classes each session). By this change regularity and punctuality in attendance have been secured, and from a membership of thirty pupils there was an immediate advance to a membership of ninety-six in eight classes, each receiving instruction one hour per week. A few girls (six) were invited to join one of the classes in 1878. There are now two full classes of girls, and there is one class composed partly of each sex. The work of the girls is equally as good as that of the boys and they seem to enjoy it heartily.

The attendance is entirely optional, nearly one-half the pupils in the first and second classes of the two larger grammar schools desiring to attend. There is no compulsion whatever, except that, while members of the industrial class, the pupils are required to be as attentive, industrious, and orderly as during any portion of their school work.

THE PROGRAMME OF THE PRACTICAL LESSONS IN MANUAL TRAINING.

A shop was fitted up with benches to accommodate twelve workmen; and, in addition to the vise and bench-hub, the following set of tools was furnished for every member of the class: a rule, try-square, hammer, jack-plane, jointer, smoothing-plane, bit-stock, bit, mortise-gauge, mallet, one-half inch mortising-chisel, one and one-quarter inch paring-chisel, chalk-reel, rip-saw, panel-saw, screw-driver, brad-awl, oil-can, oil stone, bench-hook.*

The pupils were assigned places at the commencement of the course of lessons,—students using the same set of tools in succession,—and were held responsible, throughout the whole course, for keeping the tools in good order, for using them carefully, and for returning them to the proper place at the close of each lesson. Habits of neatness, carefulness, and order are thus established; and the acquirement of such habits is, by no means, the least of the advantages of any form of industrial training.

Before a pupil is permitted to use the tools, he is taught their names and uses; *e. g.*,—

The Jack-Plane.—The teacher exhibits a jack-plane to the class, and requires each pupil to take such a tool from the compartment assigned for his use. After giving its name, if the class cannot name it without assistance, the instructor directs the attention of his pupils to the several parts of which the plane is composed, teaching the name of each part. He shows the class how to remove the cap-iron, and take out the plane-iron. After this has been done to his satisfaction, he requires the pupils to adjust the plane-iron, and to set the cap-iron. The pupils are then prepared to employ the jack-plane, although its use is not fully taught until they can sharpen the plane-iron, as well as adjust it. When any implement is employed, just such an exhaustive and minute observation and study has preceded its use as is indicated in this illustration.

The following plan of instruction, which provides for forty lessons each school-year, proved satisfactory, and was adopted. The time of each lesson is one-half a regular session of the school; four classes can thus be accommodated every day.

First Lesson.—The pupils are each furnished with blocks eight inches long, five and five-eighths inches wide, one and seven-eighths inches thick.

Use of the Vise.—The students place the blocks in the vises, so that the ends shall be level.

Use of the Rule.—Each block is measured, and its dimensions stated. The width of the block is divided into five equal parts.

Use of Try-Square.—Pupils are taught to square across the block, and to mark, with pencil, the division lines of the five equal spaces. The thickness of the block is halved, and a line drawn through the middle from points at the center of each end, making ten squares upon the end of the block.

The following general description of striking tools may fitly precede the statement of what is attempted at the second lesson:

There is a large class of *striking tools*. It includes the hammer, the mallet, the beetle, the hatchet, the axe, the adze, and all other tools which act by blows. *Three movements* are practiced in striking with the lighter tools. They are the wrist, the elbow, and the shoulder movements.

In each of the first three exercises, strike a number of blows with the proper tool upon a soft-wood board, or block, or upon a pad; repeating the exercise until the nature of each movement is well understood, and fixed in the memory.

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* These sets of tools are now loaned to the State Normal School, Salem, Mass., and the classes at Gloucester have been discontinued.

The wrist movement is suited to the use of tack-hammers, and other light tools with which taps are struck.

The elbow movement is suited to the use of tools of *light and medium weight*, with which blows of medium intensity are struck.

The shoulder movement is suited to the use of the heavier tools, with which somewhat heavy blows are struck by one hand.

The striking tools may be classed *in two principal subdivisions*. Those of the *first subdivision do not act directly* upon the wood; but they strike a second tool or instrument which does act upon it. The hammer, the mallet, and the beetle are examples. Those of the *second subdivision do act directly* upon the wood. The hatchet, the axe, and the adze are examples. They are not simply striking tools; they may be *splitting*, *cutting*, or *piercing* tools as well. We are concerned with them, in this chapter, only as striking tools. It generally requires more skill to swing with sufficient precision the tools of the second subdivision than those of the first.

A statement of the forty lessons of the course follows in detail. For the description of the various processes, credit is given to "Professor Channing Whitaker's excellent manual,"* elsewhere referred to in this volume. It will be seen in the report by Professor Ware, which prefaces that work, that credit for valuable suggestions is there given to Mr. C. H. Dow, "who taught a school of this kind in Gloucester in 1878–'79," and who used the preliminary lessons issued by the Industrial Science Association, on which the Manual was subsequently based.

Superintendent Marvel, under whose direction Mr. Dow, a practical carpenter, was employed to give this instruction, closes with the following estimate of the cost of such lessons, and with suggestions as to their value to all the pupils of the common schools throughout the United States.

One point of this experiment is specially worthy of note, because, in some instances where a pretense of introducing manual training has been made in public schools, so little time—three-fourths of an hour once a week—is given each pupil as to make it a mere farce; as is likewise the case, often, in schools where drawing is pretended to be taught. In Gloucester one-fourth of the school-day was given to the lesson. One-half a day each week given to this study, with one hour of the time given to construction drawing, would seem little enough to warrant expectation of good results.

At the close of a year nearly every member of the class can do any of the work which has been attempted, as constant reviews are made by the employment of tools, the use of which had previously been taught in preparing stock for the special lesson of the day. An economical use of stock renders this item of expense merely trifling. Lessons three to twenty (inclusive) require less than three feet of stock, and the forty lessons only about twenty-five feet, nearly half of which is used in making the box.

The following is an approximate estimate of the expense of such education: A room, similar to the one at Gloucester, can be fitted up for a carpentering class at an expense not exceeding five hundred dollars. In such a shop, thoroughly and completely equipped for the purpose, one teacher can instruct four classes each day, twenty classes each (school) week, and do his work efficiently. Sixteen members may be permitted to attend each class without detriment to the progress of individual pupils. Allowing forty weeks for the academic year, and making the salary of the teacher twenty dollars per week, the annual cost of instruction would be eight hundred dollars. The expense of stock would not exceed fifty cents *per annum* for each pupil. Upon this basis the *per capita* expense of instructing three hundred and twenty pupils would be about three dollars a year. Certainly the expense is not very great; and, if attendance at the classes is made voluntary, those who do not desire the instruction are not compelled to receive it. No argument can be advanced against instruction, at public expense, which may not be applied with equal force in opposition to teaching book-keeping and surveying in the public schools, as *required* (not permitted) by the laws of the Commonwealth of Massachusetts.

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*"Wood-working Tools; How to use them. A Manual. Published by Ginn, Heath & Co., for The Industrial Science Association, Boston, Mass. 1882." Ill. Pp. 102.

It is not the function of the public schools to furnish special education for any profession or trade, but to afford the best training and culture possible for the thorough preparation of pupils for the general duties of citizenship; and there is no legitimate objection to any exercise or study which tends to the proper development of the intellectual faculties, of physical strength, of manual dexterity, unless it can be shown that it is inefficient, impracticable, or too expensive.

This attempt to combine intellectual and manual training will tend to dignify manual labor in the opinion of many young people, just at that critical period when so many are now wasting opportunities for practical education in a vain endeavor to accomplish purely intellectual work for which they are totally unfitted. Recognition, in the public schools, that mechanical occupations are equally as important as the professions or as mercantile pursuits, and that the scheme of public instruction is broad enough to afford an education adapted to the needs of all classes of citizens, cannot fail to leave a marked effect upon the succeeding generation. Boys and girls will deem it no less honorable to be found in the fields and work-shops, than in stores and offices, so long as they are engaged in legitimate and honorable occupations.

THE PRODUCER IS SURELY AS WORTHY OF HONOR AS THE MERE DISTRIBUTOR, "THE MIDDLEMAN."

Another consideration is, that by means of industrial education children will learn that study and preparation are required for proficiency in the trades as well as in trade. The ambition of the pupil to make a good joint or to execute neatly some form of mechanical work will be excited, and his attention will not be too exclusively directed to the performance of arithmetical problems supposed by many "practical educators" to prepare him especially for business. If the public schools can do anything which will tend to teach pupils that it is equally as important, honorable, and difficult to be a successful artisan as to become a successful storekeeper, and if our own American boys will as willingly devote three or four years of early life to learning trades as to learning business, all of our important manufacturing industries will receive a new impetus; and hundreds and thousands of boys who are starving "respectably" in stores will turn their attention to the real *work* of life and join the army of artisans. How it ever became a popular belief that there is more honor in exchanging commodities than in producing them is a question that we have not time now to discuss; but the fact exists, and if the schools can show our boys and girls that there is as much to be learned in the work-shops as in the stores, that honest labor any where is honorable, that prizes are found and fortunes made in manufactures as often as in trade, industrial education will effect a greater and wider influence for good than is generally conceded; and when such a sentiment prevails among the people, it will exert an influence the importance and value of which can scarcely be over-estimated.

VII.

"INDUSTRIAL AND TECHNOLOGICAL TRAINING."*

AN HISTORICAL RESUMÉ BY SARAH SANDS PADDOCK.

Any one watching the signs of the times cannot fail to see that industrial and technological training is one of the leading issues of the day. There is undoubtedly a growing demand for industrial schools in the United States, although there is much diversity of opinion in regard to the agency by which they should be established and conducted. Many claim that the government should establish State industrial schools. Some desire special schools, giving only technical instruction in various branches of handwork, and some would have the trades-unions, or guilds of artisans, train their own apprentices, while others are equally emphatic in their desire to have a work-shop in every existing public and private school.

While a larger number of industrial schools are now in operation than people are aware of, the public at large greatly requires enlightenment upon the urgent need for this kind of training. Within the limits of this paper, it will not be possible to do more than base an argument in its favor upon a brief outline of the history of industrial education, and a statement of some of its practical applications.

The term "industrial education" is used to designate the training of pupils, not only in the common branches of instruction, but in certain industrial or business pursuits. An industrial school, in the widest sense of the word, denotes any school for teaching one or several branches of industry. Those of a higher grade are more generally classed under the head of technical schools. The idea of providing for the instruction of children in manual labor appears to have originated in the desire to enable poor children to earn their daily bread as early as possible.

In England, Chief Justice Hale, as early as 1676, recommended to Parliament the establishment of an industrial school in every parish. In 1705, Locke laid before the English Parliament a plan to counteract the spread of pauperism, proposing to this end the establishment of labor schools in each parish, in which poor children from three to fourteen years of age were to be provided with lodging, board, support and occupation.

The bill failed, as did also one proposed in 1796 by Pitt.

In Italy, Canon Odescalchi founded in 1686, a great charitable institution under the name "Ospizio Apostolico di San Michele," which, besides other departments, comprised an industrial school for boys and girls. The girls were instructed in needlework; and a number of workshops, among which they were at liberty to choose, were fitted up for boys. This example was followed by many other institutions; and the instruction of girls in housework and needlework and of the boys in some mechanical trade became a general feature of the Italian orphan and foundling asylums.

The first practical attempt in Germany was made by A. H. Francke, who introduced instruction in turning and glass-grinding. Hecker, the founder of the first real school of this character, trained his pupils in cultivating mulberry trees and in raising silk-worms. Froebel, the founder of the "Kindergarten," emphasized the importance of trained industrial occupations in the common schools.

Needlework has been almost universally introduced into the common schools of Germany, and in some other countries. Two afternoons of each week are set apart for the instruction of girls in sewing. They begin when only six years old, and first use paper. From plain sewing, mending, and knitting, the scholars are advanced to fine needlework, tatting, crocheting. They are also taught tapestry work.

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*"Industrial and Technological Training by Sarah Sands Paddock, Industrial Education Association No. 6, East Fourteenth Street, New York. Reprinted from the proceedings of the eleventh National conference of charities and correction, Boston: Press of Geo. H. Ellis, 141 Franklin Street. 1884. Pp. 17."

The Austrian Kinderman introduced industrial instruction into the common schools, and succeeded, in the course of a few years, in organizing industrial schools in more than two hundred places.

The following account of the Austrian system of weaving-schools is taken from a monthly review of "Technical and Scientific Education," and will be found of interest:—

"The Austrian Ministry of Commerce, which supported a number of technical weaving-schools in Bohemia and Moravia, conferred with the authorities of the Austrian Museum and the government of these provinces upon the question as to the manner in which a beneficent influence in an artistic sense could be exercised in these schools of industry. The result of these deliberations was the establishment of schools for drawing and practical instruction in weaving. This effort extended itself to operatives in their own homes and in factories, and finally reached the capital itself, where qualified teachers bestowed particular care upon this special branch of industry, in which about eight hundred thousand people found employment."

"There are twenty-four such weaving-schools in the different cities of Austria, the most important of which is that at Reichenburg, which is supplied with qualified teachers by the Ministry of Commerce. The textures made at this school are considered by many unrivalled. While textile fabrics are the chief branch of study, to these are added, as higher branches, wall-decoration, painting on porcelain. and glass-enamelling; inlaid work in wood, metal and ivory; drawing for lithographic purposes; and zylography. Special care is bestowed upon copying of tissues, tapestries, embroideries, etc. Another class is devoted to the education of students in cabinet work, modelling, keramic art, and metallurgy. The term instruction is four years,—two years in the elementary class and two years in the special branch school. There are fixed terms for instruction."

At Cortena, in the Austrian Tyrol, there are two admirable industrial schools, where the girls are taught gold and silver filigree work. The boys are taught designing, carving on wood, and the making of "intarsia," or inlaid wood-work.

In Athens, a Greek gentleman, feeling the importance of the education of Greek women, who until recently have had no educational advantages, started an industrial school for women and girls, where they are taught different branches of needlework, hand-loom weaving, and the designing of fine silk dress and sash fabrics and curtain hangings, also the designing and making of Turkish and Persian rugs. Trades are thus secured to the pupils and the school is supported by their labors.

In England, before a grant is made to an elementary school, the educational department must be satisfied that the girls in the day schools are taught plain sewing and cutting-out as a part of the ordinary course of instruction. No fancy work is allowed during school hours.

Throughout Great Britain, in all the certified industrial schools, reformatories, and refuges affiliated to the "Reformatory and Refuge Union," seventy-two distinct industrial occupations are pursued by the inmates. In carrying out these industries, steam power is used in many of the institutions, and the inmates are taught the care and management of the engines and machinery. The ordinary domestic work of the Home is in all cases done by its occupants.

The following is a list of the industries, with the number of institutions in Great Britain, in which each particular industry is taught:

Name of industry.	Number of institutions in which the industries are taught.	Name of industry.	Number of institutions in which the industries are taught.
Wood chopping	67	Knitting	111
Carpentering	53	Shrimp picking	1
Cabinet making	14	Essential oil distilling	1
Boot and shoe making	126	Bread making and baking	71
List-slipper making	4	Washing and laundry work	209
Broom-handle making	3	Plain needle work	205
Tailoring	131	Upholstery	11
Tinsmith's work	2	Brush making	6
Farm and garden work	123	Basket and hamper making	7
Seamanship	6	Paper-bag making	12
Jewelry and precious stone setting	1	Mat making	18
Relief stamping	1	Printing	15
Rag and paper sorting and collecting	1	Blacksmith's work	10

Name of industry.	Number of institutions in which the industries are taught.	Name of industry.	Number of institutions in which the industries are taught.
Brick laying	2	Work in neighboring mills and factories	11
Turning	6	Net making	6
Book binding	2	Straw plaiting and working	4
Riddle making and wire work	2	Dress making and millinery	31
Hair teasing	9	Lace making	10
Stone cutting and mason work	3	Match-box making	8
Plumbing, glazing, painting, and gas-fitting	8	Manufacture of fire-lighters	5
Button carding	1	Brick making	2
Bristle sorting	2	French polishing	4
Sack making	1	Rope making	3
Church and other embroidery	14	Rag cutting	1
Manufacture of flock	1	Manufacture of peat fuel	1
Nail straightening	1	Cooperage	1
Power-loom weaving	1	Hairdressing	1
Crochet, netting, and fancy needlework	45	Chair caning	13
Dairy work and farm-yard management	56	Band musicians	13
Carpet beating	4	Corn grinding	1
Cart making	5	Road repairing	1
Glove making	1	Bed and mattress making	2
Lithographing	1	Rug making	3
Boys sent to morning places to clean knives, boots, etc	16	Picture-frame making	2
Harness making	3	Bandbox making	1
Errand or messenger boys	13	Tassel making	1
		Fretwork	2

In America, it is extremely difficult to know what to do with that improvident section of our community, the drift of idlers. Our hope for the future lies mainly in the proper training of the young in industrial habits, that they may not lack the industrial capacities in which the shiftless jobbers are so deficient. Skilled labor only being in demand, the present most imperfect state of industrial education of the masses is largely to blame for the great number of unemployed in our midst. The trades-unions and similar organizations, having, in a large measure, done away with the apprentice and journeyman of former days, the young people of to-day have little or no opportunity to learn trades and become skilled workmen.

After briefly quoting from the special report on "Industrial Education," issued by the U. S. Bureau of Education in 1883, as to the need of definite technical training caused by the decadence of apprenticeship, our author says:

The almost infinite subdivision of labor which exists in our modern industries is responsible for a large amount of deteriorated boy and girl labor. Learning, as the young do, only in part how to make any one thing, the demand for which expires with a contract or fashion, it is no wonder that the intermittent unemployed class is largely recruited from their ranks. In view of the emergencies of the market, it may be this state of fluctuation in labor cannot be avoided; but it would be well if parents and guardians would watch more closely than they now do the movements of their children, as they shift from one employment to another without the acquisition of such experience as may be rendered marketable through life.

In some States, a law passed for the purpose has withdrawn a large amount of very young labor from the market. The wisdom of this law is unquestionable, but it is much to be regretted that a thorough industrial education in connection with the usual school instruction has not been provided for the children reached by it.

A child, if properly drilled, by the age of fourteen can have acquired a sufficiently competent knowledge of some trade to secure a situation, and to enable him or her to work up into a thoroughly self-supporting man or woman.

Quotations here omitted, were given from Mr. Charles G. Leland's "Industrial Art in Schools."

The great importance, also, of industrial night-schools for those who are employed during the day is too evident to need discussion. The technical instruction of an immense majority of mechanics is altogether inadequate. Such schools would be of incalculable benefit to young laborers who desire to perfect themselves in different branches of the trade. These schools should be upon a thorough business footing and without the slightest suggestion of patronage or charity. Connected with them a labor exchange, and a well-devised system of labor loans, and deposit banks would be a strong inducement for workmen to attend the evening classes and perfect themselves in some branch of industry.

It is gratifying to learn, from the reports of the United States Commissioner of Education, that the number of asylums for children in which arrangements have been made for opening an industrial department is increasing. The great importance of this subject cannot be too strongly urged upon the attention of all who found, support, superintend, or carry on institutions of this kind. The Kitchen Garden, which is so perfectly adapted to the needs of its inmates, has pre-eminently its mission in these institutions.

INDUSTRIAL TRAINING IN AMERICAN REFORMATORY INSTITUTIONS.

Except in Massachusetts, there are no laws in this country requiring industrial or technical training; but we are glad to find that, in the majority of the reformatory institutions in the United States, trades are taught. The reports of these institutions indicate the teaching of forty-two distinct industries, while, as has been seen, seventy-two are taught in similar institutions in Great Britain. Ordinary trade instruction has so far proved a great advance; but, unquestionably, the Russian technologic system, as taught in the School of Mechanic Arts in Boston and elsewhere, if introduced into the reform and industrial schools of this country, would result in far greater progress than has yet been attained. Under this admirable system, the boy not only learns a trade, but he acquires it quickly. At the same time, he learns, by successive and easy stages, scientific principles underlying all trades, so that when he leaves school he can readily adapt himself to pursuits other than those in which he has been especially instructed.

While the feasibility of such technologic training might once have been justly questioned, it has now passed beyond the experimental stage, and receives the endorsement of distinguished specialists engaged in juvenile reformatory work. It has been stated by one of these gentlemen that, for example, in the simple matter of forging, it is his belief "that the boy with his forty lessons in forging, so far as his knowledge of the art and his ability to apply what he has learned are concerned, is quite the equal of the boy who has spent his two or three years of apprenticeship under the usual conditions."

Seeing that this system of technologic training is the best in use, it is a matter of regret that there are any hindrances to its general introduotion. In the history of juvenile reformatory institutions, we find that those first established in New York and three other States adopted and still adhere to the baneful contract system, although it has been set aside or disapproved everywhere in Europe, and by the majority of institutions in America. This system, which subjects the labor of the child to the control of contractors, must, necessarily, be carried on in the interests of the contractor instead of for the benefit of the child, and cannot but be opposed to any industrial or technologic training which has solely in view the thorough training of the child.

The protest of the committee of the New York State Board of Charities, in 1879, against the contract system in juvenile reformatory institutions, and the recommendations by the board that technical instruction should be systematically taught in them, are quoted; the author then says:

We certainly cannot improve upon the Creator's design; namely, that of the "family system." True family life is what these poor waifs and wards lack and what they so much need. It is a system founded upon natural and fundamental principles. In the home are found the most impressive influences, which are indelibly fixed upon the child's mind and character.

This is even more true of girls than boys; for the home is pre-eminently woman's sphere, and it is especially desirable that every girl should be trained in the various branches of work pertaining to the household. This can be readily done while she is also being trained in such other useful industries as will enable her to become as self-supporting as her brother. There is no excuse for allowing a girl in a refuge or reformatory or orphan asylum to become so institutionized that she is of little or no value in family service. There are now excellent systems of domestic training which thoroughly fit girls to perform all the duties included in home life. Happily, these systems are gaining in favor; and domestic economy has its place in the curriculum of schools of the highest standing for young ladies. Into many of these schools throughout this country and abroad, the kitchen garden system has found its way, and is doing as excellent a work in this line as the Kindergarten in its field.

New and carefully prepared school primers and more advanced text-books on domestic work have been prepared, and deserve general use. Schools adopting the methods advocated in these books can hardly fail to give their pupils the knowledge essential to a good housewife.

INDUSTRIAL EDUCATION OF WOMEN IN FRANCE.

The history of the French movement for the industrial education and employment of women furnishes the most striking and at the same time the best example of what can be done in this direction. This movement dates from about the year 1862. Up to that time there existed no organization in France for aiding women to compete with men in any occupations demanding more than manual work. Female employment was mostly confined to inferior grades of industry, requiring little skill, and, as a necessary consequence, offering small remuneration. The attention of thoughtful men was called to the subject: and in May, 1862, there was formed in Paris an association called "Société pour l'Instruction Professionelle des Femmes." This society commenced its operations very modestly, having for its capital about $250, and five pupils. At the end of the first six months there were forty pupils, and at the close of the year the school had greatly increased and was found to be self-supporting; for it was laid down as a basis of the system that the pupils should pay for their instruction, the sum being fixed at eight francs, or about $1.60 per month. The whole success rested upon rigid adherence to this rule. The work has steadily increased year by year, so that a system of examination had to be instituted, designed to favor the most deserving candidates.

A report of this society says:—

"At the opening of the school in Rue de la Perle, and for a number of years afterwards, the system followed was to divide the pupils into four classes. The first class, through which all passed on entering, supplied a general education, serving also to show the capacity of young women for any particular occupation; the second class, called "Cours de Commerce," furnished a training for purely commercial purposes; the third class, "Cours de Dessin," supplied the want of those who sought an education to be applied to industrial purposes; the fourth class, called "Atelier Confection," gave practical teaching in millinery, dress-making, and all kinds of needlework.

To these were added after a while several other classes, in which pupils were prepared more directly for certain trades. In one of them, which proved very successful, wood-engraving was taught; in another, painting on porcelain and on ivory; and, in a third, the design and manufacture of jewelry and of various "Articles de Paris." More and more as the institution developed itself, it was found necessary to prepare its pupils for definite occupations. The plan was adopted of placing such of the young women as desired it in work-shops and ateliers, where they might gain practical knowledge of the business they wished to acquire. They did not cease on this account to remain pupils of the school, but only quitted it for a fixed number of hours every day, to supplement their theoretical knowledge with that of practice. The result of all these arrangements was a success far beyond the most sanguine expectations of the original promoters of the scheme.

The institution started in the Rue de la Perle not only turned out a large number of educated women,—all of whom found employment the moment they left it, the demand for them being greater than the supply,—but it produced a movement which, spreading all over France, gave rise to a vast number of institutions of the same kind. Of the schools for teaching particular trades, one of the largest and most successful is the "Atelier de Devidage de la Soie," established by the large silk manufacturer M. Hamlin, in Paris, with branches at Lyons and St. Etienne. The Paris school has two hundred and fifty pupils who are completely instructed in the art of silk weaving, including the designing of patterns.

Other trades are similarly provided. The goldsmiths and jewelers established the "Ecole de Dessin et de Modelage" for women, which is training a great many to fill not only the low, but the higher and highest posts in an industry of immense importance in the French capital. There is still another school for the manufacture of metals, still another for repairing clocks and watches.

Owing to the efforts of some of the most influential of the "Sociétés de Patronage," two important State establishments, the celebrated manufactory of the Gobelins and the National Printing Office, have in recent years been thrown open to women. The fact that women should have been admitted among the highly trained artisans of these places, artists in the first case even more than artisans, is a striking testimony to the value which the industrial training of women has already eached in France.

Female labor spread very greatly in four other branches of Parisian industry, besides those already named, in the years from 1860 to 1872. These were the trades of watch-making, of the manufacture of musical wind instruments of all kinds,—flutes, trumptes, etc.,—of piano and harp manufacture, and lastly of surgical instruments and bandages. The increase of women in the watch-making business during the twelve years was no less than 2,740 per cent.; while, in the manufacture of wind instruments, it amounted to 6,600 per cent., and in pianoforte and harp manufacture to 11,266 per cent. No less than sixty per cent. of the artisans were women."

This lengthy quotation from the report of Mr. Watherston shows in part what has been accomplished in France for the industrial education of women. Would that it might thoroughly incite us to imitate the example set us by the earnest few who initiated this grand work for women!

TECHNICAL SCHOOLS FOR AMERICAN GIRLS SUGGESTED.

How much better would it be, if only those who showed a decided aptitude for the "higher education of women" were admitted to a normal school with the view of fitting them to become teachers, while the others, who also must earn a living, were provided with technical schools, where they could pursue a commercial course or perfect themselves in some of the many branches of industry in which their French sisters excel so wonderfully! We can but be encouraged by what has already been accomplished and is now done for the masses of those who must support themselves. With our growing population there is imperative demand for technical industrial training, and we should make strenuous efforts to effect its introduction wherever it is not given. New avenues would thus be opened to those who must seek employment as soon as they finish their common school course of study. The present channels are overcrowded by those who, when they are thrown upon the world, have had no instruction which would fit them for some handicraft. They are consequently obliged to follow in the crowded lines instead of supplying the steady demand for skilled artisans.

In the United States, Massachusetts takes the lead in industrial education. The legislature of that State has ordered its introduction into all the common schools. The report of the Committee on Industrial Schools, made to the Board of Education of Boston, recommends that sewing, which is now taught in three classes of girls' grammar schools, be carried forward into all the classes by a gradual progression, care being taken not to allow it to interfere with their other studies. The proposed course of instruction includes shaping and fitting all ladies' garments, the requisite materials to be furnished by the city. * * *.

A number of admirable industrial schools, not connected with asylums or public schools, are now in successful operation in Boston, New York, Philadelphia, and other cities.

The New York Legislature in 1875 passed a law (Laws, 1875, Chap. 322, Reports) entitled "An Act relating to Free Instruction in Drawing." It designates State normal schools, city schools, and union schools in which this instruction shall be given; but, upon inquiry, it is found that, with the exception of normal schools, the law has not taken full effect outside of the city of New York. This is the nearest approach to a law requiring industrial and technologic training in New York. It is hoped legislators in all our States may be aroused to the importance of enacting laws requiring industrial training at least in all institutions supported by the State, and of providing some means for the enforcement of such laws.

TECHNICAL TRAINING NEEDED BY ALL CLASSES IN THE COMMUNITY.

There can certainly be no question as to its being the duty of our public instructors to give that training which will best qualify their pupils to be the most useful and self-supporting citizens. They should at least fit them to be able to return to the community an equivalent for what they have received from the State.

Nor does this apply alone to those who are educated at the public expense. There can be no greater fallacy held by Americans (who are pre-eminently working people) than that technical training is only for the working classes. The sooner we dignify labor by putting it into its proper place, the sooner shall we get rid of our erroneous notions about it. In the vicissitudes of life, we know not what may be the lot of any. Knowledge of a practical character is of immense value to every one, and no one can afford to be deprived of it.

To those interested in solving the perplexing problem of how to get rid of the growing pauperism which threatens to fasten itself upon us as it has done on the older nations of Europe, this subject of industrial education is of vast importance; for it strikes at the root of the evil, and, if persisted in, might be the lever to lift us out of the difficulty. To those acquainted with the subject before us, the outlook is more encouraging than one would at first suppose. To give an adequate idea of simply the volunteer and private effort in behalf of technologic and industrial training in the United States would make a large and interesting volume. There are in New York City alone fifty-two schools and institutions giving this instruction.

THE KITCHEN GARDEN, BY MRS. BRIANT.

One of the most ingenious is an outgrowth of the Kitchen Garden, the principles of which have been adapted, by Mrs. Briant, to a system for instructing little boys in the elements of agricultural pursuits. They are taught. by using a large box of earth and by means of miniature ploughs, harrow, rakes, hoes, etc., the processes of preparing the ground, sowing the seed, caring for it, gathering in the crops, taking the corn or wheat to the mill, grinding it, and finally leaving it in the kitchen for the bread-maker. All this is accompanied by questions, answers, songs and whistling to a piano accompaniment. So the work of the farmer, like that of the housemaid, is made bright and attractive to children.

For asylums or orphanages in rural districts nothing could be better for the very little boys than this early training in the pursuits they would naturally follow.

* * *

Any information regarding any of these schools can be had from the Industrial Education Association of New York, the object of which is to disseminate information on industrial training and to endeavor to stimulate a general public opinion in its favor.

Those desiring to study the subject of Industrial Education would do well to procure a copy of the special report of the United States Bureau of Education on Industrial Education in the United States; but there is no more valuable and extensive source of information on this subject than the report of the Royal Commission on "Technical Instruction" in Europe, recently presented at the command of her Majesty to the Houses of Parliament in London. One cannot read these volumes without feeling that we in America are yet in the infancy of this subject. But we are slowly coming to believe that there is no truer maxim than that which is recorded as a saying of one of the wisest of the rabbis, "He who would not bring up his son to a trade was as if he forced him to be a thief." Nor is that which was said by Wilhelm von Humboldt less true: "Whatever we wish to see introduced into the life of a nation must first be introduced into the life of its schools." Hence we argue that all schools should be provided with technical and industrial instruction."

VIII.

HAND AND EYE TRAINING IN THE PUBLIC SCHOOLS.

By Superintendent W. S. Mack, Moline, Ill.

INTRODUCTION.

The following extracts are from the interesting paper read before the Illinois State Teachers' Association, December 31, 1885, by the School Superintendent of Moline, Ill., an account of whose experiments in promoting and exhibiting the industrial work of pupils in the public schools of that city, will be found in Chapter XVII of this volume (see pages 220–225).

Superintendent Mack, after briefly reviewing the educational philosophy of several countries, the Chinese, the Greeks, the Romans, and the Europeans of a later age, and suggesting the sources of our modern educational ideas, thus concludes that part of his paper and proceeds to set forth the various arguments in favor of the development of the industrial features in the elementary schools of the United States. As an early statement of these arguments by a very competent educator, these extracts are of value.

EVOLUTION IN METHODS OF EDUCATION.

We have not the time, nor is it necessary to review the work of those most prominent in the evolution of education—to find what contributions of original value each has made to the general fund, and to what extent each was influenced by his predecessors, and by the social conditions which constituted his environment. We do know, however, that this evolution is going on unceasingly, parallel to, and as a result of, our widening knowledge of human capacity and destiny, and our better comprehension of social laws, and will continue to the end of time; that education has a definite and determinable value in this life; that in order to prepare its recipients for right living, it must meet the demands of the organization of which they are a part; that no absolute standard of individual excellence is conceivable—the highest standard being only the formulation of the best thought of those who create it; that education does not seek to accomplish results beyond this standard; that all the schoolmasters on the face of the earth cannot impose an education out of harmony with the circumstances which order our lives. These are the inevitable conclusions to which history leads us, and it is this which should govern our investigation of the subject in hand, that we may consider it not less from the standpoint of the citizen than of the schoolmaster.

Returning to our inquiry—how did the subjects now taught in the schools get there, and why is their claim unquestioned, we are prepared to answer—their knowledge-giving value first won them a place; their knowledge-giving, combined with their self-culture value, has given them a *permanent* value as educational means.

That these subjects were originally valued, chiefly, if not wholly, because they contained information more or less directly applicable to the ordinary affairs of life, is evidenced by the prevalence of the memoriter methods in the early schools—methods which have not entirely disappeared from the schools of our day, and which exalted the *receiving* above the *potential* ability of the pupil. That the best teaching of to-day aims to give power by exercising the mind largely upon those subjects which possess the greatest knowledge-giving value, shows, also, how utterly impossible it is to rid our educational equation of its life quantity.

But do the present subjects furnish a basis for all the training that is desirable in the public school? Do they embrace all the avenues by which the mind is approached, and all the processes by which the pupil's growth is promoted? Do they compass all the means by which we realize our concepts in actions? Who says yes?

On the other hand, is not the education we are now giving more nearly in accord with sound educational principles than that of any previous generation? Has not every one of the subjects we are teaching a demonstrated value in our courses of study? Does not each confer a training and a knowledge which none of the others can supply? Who says no?

The sound advocate of hand and eye training does not urge the omission of any of the present subjects, that this, or any other, may find a place. To him the problem is not one of *substitution*, but of *addition*,—a broadening of our common school curriculum, in order that we may obtain the results contemplated in our most conservative definition of education. He would narrow the gap which separates the *science* from the *art* of teaching. The nearer these approach, the nearer we shall come to fulfilling our obligations as educators, or rather, the nearer we shall come to earning and deserving the title of educators at all; for is it not obvious that the principles which constitute the science of education are of little value, except as they are applied to the training of youth, and does not the neglect of any device by which these principles may be realized in practice, imply to that extent a failure to educate, through the inadequacy of the art?

IMPORTANCE OF THE SUBJECT.

The subject of hand and eye training, then, becomes one of the most important before the people and the educator of to-day. No subject of training now employed in our elementary schools ever had to knock so long and so loudly for admission as this, or was ever kept waiting so long on the threshold of our educational temple, while its passports and letters of introduction were being scrutinized, that we might satisfy ourselves that it was no presumptuous intruder, instead of the bearer of good tidings to all—to the pupil in training; to the teacher who trains him; to the community which takes its character from this contact.

WHAT IS PROPOSED BY THIS TRAINING.

Before proceeding farther let us define our subject more closely—first negatively. By hand and eye training we do not contemplate the teaching of trades, or the giving in any sense a technical training with a view to preparing for a specialty, any more than we are guided by these considerations in our teaching of reading, arithmetic, language and penmanship. At no period could the public schools educate its pupils for a specialty without impairing its highest usefulness. The years which the pupil spends in it are none too long for developing that power and those aspirations which make the man and the citizen, and any attempt to specialize prior to, or at the expense of this training, is not only contrary to the spirit of the public school system, but is also incompatible with the highest degree of technical power which is possible only when supplemented by the resources developed by general training.

MISTAKES MADE BY EARLY ADVOCATES.

This is something we can ill afford to loose sight of, for it is doubtless just here that the early advocates of "Industrial," or "Manual Training" made their mistake, and antagonized the best educational thought, by urging what they intended to be, to some extent at least, a specialization of elementary education. To this prejudice is chiefly due the postponement of that rational culture which our subject contemplates, namely, the cultivation from the earliest years of the hand and eye as two of the most important avenues, over which from the beginning to the end of life the best material for our concepts is conveyed to the brain, and thence out again as materialized thought; a method of training which gives power to perceive clearly, to conceive rightly, and to express effectively. Pass before your mind's eye the matter and the methods which constitute the education of the public school as now organized, and say, if you can, they are adequate for the full, or even the reasonable accomplishment of this purpose; or say, if you can, that the results here proposed are outside the legitimate province of the public school.

VARIOUS DESIRABLE METHODS SUGGESTED.

Once the necessity for this training is admitted, the appropriate and adaptable means for giving it will be at once suggested. Drawing and moulding; the realization of form in materials which are easily fashioned and combined as paper, cardboard, wood, etc.; many kinds and varieties of needlework, and the cutting of patterns for the parts of garments: and finally, as soon as the pupil's physical development admits of it, the workshop,—the "crowning glory" of all,—where the boy may learn the qualities and possibilities of constructive materials by being exercised in the manipulation of tools, are some of the more obvious means, already tested, for giving this training.

Let us now specify some of the more important and pressing reasons for according to this training *general* and *permanent* recognition in our school work:

TRAINING IN DRAWING QUICKENS THE PERCEPTIONS.

I. It will increase the perceiving power of the pupil, or in other words, it will enable him to get a larger number of, and at the same time clearer impressions, from the multitude of objects with which he comes in contact, and which are the basis of his thoughts. It is true the brain absorbs by means of *all* the five senses, which include of course the functions of the hand and eye; but the quality of these impressions depends entirely upon the *delicacy* and *accuracy* of the absorbing medium, which in turn are the result of frequent and proper exercise.

The pupil has been getting his knowledge of different subjects chiefly through the eye and ear—through the eye by reading the printed page, and to a meagre extent relatively, by contact with, and by the production of graphic and concrete illustrations.

DRAWING AS AN AID IN TEACHING OTHER STUDIES.

Arithmetic, Geography, History, and Science cannot be efficiently taught without the frequent aid of form—a language which oftentimes conveys more accurate information to the mind through the eye, than the written medium. Drawing clears away many of the difficulties incident to operations with fractional numbers: drawing, combined with the production of concrete forms, is indispensable to the intelligent solution of many problems in mensuration; drawing and moulding vitalize the facts of geography and history, and fix the observations and deductions in natural science; drawing and the construction of apparatus lead to an easier and clearer comprehension of the principles of physics and chemistry. Is not a training which gives to pupils this equipment, worthy of recognition for this, if for no other reason, and is it not evident also that two of the most important means of getting information have been made only partially available?

TRAINING IN DRAWING ADDS TO POWERS OF EXPRESSION.

II. It will increase the expressing power of the pupil. Mr. John S. Clark of Boston, in an address delivered before the Philadelphia Board of Trade, June, 1881, covers this point admirably. He says, "The force or character of a brain is measured entirely by what comes out of it. The brain absorbs through all the five senses, while for expressing purposes it makes use of but two of these senses, or rather of but two organs of these senses—the tongue and the hand. We find that provision has been made for greatly distending the absorbing side of the brain, while for the expressing side the provision has been limited to the use of the tongue in speech, and the hand in writing. A remedy for this defect is indicated in the addition of the study of graphic and esthetic art through drawing, and of training in the manual arts, to the previous brain equipment. These features come into the scheme on the expressing side of the brain and in the service of the hand, thus giving the brain ample power to discharge thought in its most complete form for use or for beauty."

In the quotation cited, the regulative value of the eye in the execution of all form, is assumed to be self-evident. The concrete forms which man creates are no more the product of one than the other. The hand is the machine, the eye the controlling and regulating agency, and the brain the source of motive power. If we stop to consider how much expressing power is comprehended by the *hand* and *eye*, and to what extent the people of the world are required to express thought by means of these in the economic arts we cannot fail to perceive the paramount importance of developing by every proper means the efficiency of this medium.

TRAINING IN DRAWING PROMOTES HABITS OF ORDER AND EXACTNESS.

III. It will develop habits of method and exactness. Train the eye to appreciate form, and the hand to represent and create it in all its varied applications to decoration and construction, and in accordance with the established principles of art, and you will find that along with this practice, you have cultivated a precision in the combination and arrangement of details to secure the final result, which will affect all the operations of the mind, whether in the realm of the concrete or the abstract. The intelligence and the application which will enable a pupil to work a good button-hole, and hem a handkerchief evenly, regularly and neatly; square two pieces of wood and unite them by means of a close joint, following the details of a working drawing; represent on a flat surface the appearance of an object in space, with the proper proportion and convergence of lines, or combine form units for purposes of ornament, with a due observance of the laws of proportion, symmetry, balancing and adaptability to space, will tend to make the same child more accurate in his numerical computations, more concise and precise in his oral and written expression, and more methodical in this and all other school work.

We are as positive that proper training of the hand and eye will do much to reform our loose habits of thought and expression, as we are that the proper study of science will develop habits of observation and classification.

TRAINING IN DRAWING DEVELOPS THE PERCEPTION AND LOVE OF PROPORTION AND OF BEAUTY.

IV. It will develop the esthetic nature of the pupil by bringing him into intelligent communion with form, without which contact a cultivated and refined taste is impossible. No training the school can give will do more to enlarge the pupil's capacity for enjoyment, than that which puts him in sympathy with the subtle qualities of form. Without this sympathy half the sunshine of life is intercepted before it reaches us. Without this sympathy and the knowledge that comes with it, man is deprived of one of the strongest incentives to the improvement of his surroundings—to making them attractive to the eye and the understanding, and thereby to the creation of an atmosphere in which character cannot help but thrive. A simple illustration will make our meaning plain.

Did you ever notice what abominable taste, or lack of taste is displayed by the average community in the care of streets and yards, and in the construction, decoration and furnishing of dwellings—with streets outside the wagon track grown up with weeds; the lawns and shrubbery unkept; monotonous parallel stretches of picket fence approaching in the dim perspective; the single, staring, nightmare-producing gable, always facing the street; the square windows and red blinds; the abortive attempts to imitate natural forms in carpets and wall papers; the sham furniture, and the gaudy lithographs and chromos on the walls, which shock the eye more than the patterns they partially cover.

These things indicate a low order of taste in matters of mere form, whose contact we cannot avoid, that is wholly incompatible with the development of those emotions and sentiments which constitute the highest refinement of the home and of society.

Only the training we are now discussing, working on the esthetic nature of the masses through the public school, will make our homes more attractive, and their inmates happier through their increased capacity for enjoyment.

TRAINING IN DRAWING TENDS TO DEVELOP HARMONY OF CHARACTER.

V. It will develop the moral along with the esthetic nature. It is difficult to refine the taste in matters of form, without refining to a considerable, if not to an equal extent, the aspirations and the conduct. The numerous objects upon which the individual may exercise his self-activity at all times, will, by the very occupation they furnish, leave little room in the mind for low aims and desires. "Gradually, and almost insensibly," quoting Felix Adler, the foremost advocate of hand and eye training, or the "Creative Method of Training," as he calls it, "the analogy of the work performed on outward objects will be applied to inward experience. A delicate sensibility to true and harmonious relations will be engendered, and the impressions thus obtained, can later on be raised into convictions by direct moral instruction. The pupil, when of sufficient age, can be taught that in the world of thought, and feeling, too, truth and harmony of relations are the sole ends to be sought. Thus, while he is shaping the typical objects which the instructor proposes to him as a task; while he poses silently, persistently and lovingly over these objects, reaching success by dint of gradual approximation, he is at the same time shaping his own character, and a tendency of mind is created, from which will eventually result the loftiest and purest morality."

TRAINING IN DRAWING REVEALS NATURAL CAPABILITIES OF PUPILS.

VI. It will help to reveal the adaptability of the pupil. If there is anything that educators are agreed upon, it is that the education of the common school should lead the pupil to exercise the latent power of his nature in as many different forms as possible, in order that he may choose intelligently that occupation for which his organization adapts him. This he certainly cannot do, unless, as has been previously stated, he has at his command the means for expressing himself, for asserting his peculiar bent. It is equally certain that the training we have been giving, by ignoring the principles and materials of form, and the relations which these sustain to the life employments of the majority, has made the school in a multitude of cases, a hindrance rather than an aid to right living, or as has recently be said of the university in a late Review—"A place where pebbles are polished and diamonds dimmed."

IT STIMULATES THE ATTENTION.

VII. It will give zest to abstract study by serving as a recreation. The recreative value of hand and eye training is not the least important of its recommendations. To the pupil wearied with the study of books, with interest lagging and senses dulled, it is a welcome and a restful change. The vital forces are brought to bear on other organs, and with new exercise comes renewed interest and pleasurable sensations. Only by combining manual with mental exercise, carrying neither to the extreme of tiresomeness can we secure that harmony of proportions in school work, which is so essential to healthful activity.

IT ENCOURAGES AND DEVELOPS THE INDUSTRIAL SPIRIT.

VIII. Lastly, hand and eye training carried on during the school life of the pupil, in the manner described, and with the immediate results enumerated, will do more than the combined training now given, to make pupils orderly and self-supporting members of society—to prepare them for that citizenship which our highest standard contemplates, and which after all is the ultimate aim of education. Educate the pupil so that he can estimate his own power, and you give him the ability, and the inclination to be a producer—to be a giver as well as a taker in society.

An education which cultivates the *industrial spirit* is the best education the school can give; it is the only all around education; it is the only humane education; it is the only education based on the self-activity of the pupil, and is therefore the only education which will satisfy the demand of our day and generation, potent beyond anything we have yet tried to diminish and prevent pauperism and crime, which are increasing out of all proportion to the growth of population, in spite of our present methods of training. If you think we go too far in this particular, and claim too much, read Royce's "Deterioration and Race Education"—not for its literary qualities, not for its conclusions, but for its overwhelming mass of data, collected from every civilized country, from our own especially, and formulate your *own* conclusions.

There will be several minor advantages accompanying this training which we have no time to discuss, chief among which is the economic one of constructing a large part of the apparatus and appliances needed in the school-room, and the inducement offered to a large number of pupils, especially to boys, to remain longer in school.

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After a succinct recital of the few experiments which had then been begun in various places Mr. Mack concludes.

Enough has been said to show the drift of public sentiment in different parts of the country, widely separated by space and local conditions. Enough has been said to show that this movement is in the direction of a broader elementary training, instead of the narrower education of a specialty. Enough has been said to show that hand and eye training is designed to supplement and not supplant the present literary training of the schools. Enough has been said to show that unless our literary training be thus supplemented, we shall, in the estimation of those most prominent in the new movement, fall short of training youth for the responsibilities and emergencies of modern life.

As a parent, as a teacher, and as a citizen, then, we plead for systematic training of hand and eye throughout the public school course—as a parent, because we want our children to go out of the public school with the best possible equipment, and with the ambition to be somebody, and to accomplish something through honest labor, of whatever kind; as a teacher, because we want to prepare our pupils for the highest standard of right living; as a citizen, because we believe education should make men not only more intelligent, but more order-loving, through the cultivation of the "industrial disposition," a consummation which we have no reason to think will ever be attained by means of our present literary training.

IX.

THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

INTRODUCTION

This Association, which for the past few years has been a potent factor in arousing, informing and directing public opinion in Philadelphia concerning matters affecting the education of children, and especially in regard to those changes in the methods of school training which characterize the "New Education," had its origin in a report made in 1880 by a sub-committee, to the Central Committee "on the care and education of dependent children," of the Society for Organized Charity. This comprehensive report was prepared by the chairman of the sub committee, Miss Charlotte Pendleton, who has since become the secretary of the association to which it gave rise.

It is significant that this charitable organization, being of necessity confronted with the problems presented by the children of the poor, found itself forced not simply to consider how its own efforts might be exerted directly to their solution, but to a full realization that the problems were so difficult, the needs so great, and an immediate solution so essential to the welfare of all, that only the Community, through its organized instrumentalities, was capable of successfully meeting the issues. The most cursory examination of social phenomena in the United States can hardly fail to enforce and emphasize the fact, that, however it may be elsewhere in the world, it is certain that in this country the education of the children of all the people can only be undertaken by the people.

In large cities the number of the needy children of school age whose training is imperative is so vast that no associations of private individuals can hope successfully to provide for their educational needs; while in rural communities population is so scattered that only by combining all the children of a neighborhood in a common school can any of them receive the necessary school training. It follows then that, whatever may be the ingenious and specious theories of the various classes who oppose the free public common schools, the underlying common sense of the people, recognizing the necessities of their existence, will guard them against all assailants.

It by no means follows that the private efforts of charitable citizens have therefore no field of labor, and that all matters relating to education may safely be left to the automatic action of public organizations. So far is this from being the case that the instances already recorded in this Report, in which private benevolence, enterprise, sagacity, have blazed the way for public action, are so numerous that to note others is to run great risk of wearying the reader. The present is a notable example.

The Association formed in consequence of this report, and which, at first, comprised not more than half a hundred of those citizens of Philadelphia who took active interest in the educational welfare of the city, began at once to collect and disseminate information on matters relating to certain features of education in which they held the city system deficient.

First, the proper organization of the school authorities was considered and the absence of any directive head noted, such as was had in other cities in the City Superintendent of Schools. Second, the importance of the adoption in the schools of some form of industrial training, then the topics of Kindergarten, of Sewing in Schools, of Manual Training, of School Hygiene, of the Pay of Teachers, of How to reach all the children of the City, were, in turn, taken up and thoroughly investigated.

In the preceding volume of this Report and, also, in Chapter XIV, of this volume, there is abundant evidence of the readiness shown by President Steel, of the Philadelphia Board of Education, to study new educational methods and to advocate such as commended themselves to his judgment. It was not surprising then to be informed by Miss Pendleton, in the note accompanying the Reports and accounts which were kindly put at the service of the writer, that the report just referred to "attracted the attention of the President of the Board of Education, who came to see me, and we both agreed that our efforts should be united to introduce Manual Training into the Public School system and not to establish especial charity schools for this purpose."

The wisdom of this combination of forces in a common purpose has been abundantly justified by the results.

While the report made by Miss Pendleton, as chairman of one sub-committee of the large society for organized charity, has resulted in the creation of this Public Education Association, the report of Miss Hallowell, the chairman of another sub-committee of the same charitable association, "on the Care of Dependent Children," led to the organization of The Kindergarten or "Sub Primary Society," which has resulted in the connecting of the Kindergarten with the Public School system.

The definite formation of the Public Education Association was due to the adoption of the closing recommendation made a year later in a second Report, by Miss Pendleton, as chairman of a sub-committee on "Compulsory and Industrial Education;" this was adopted by the assembly and a committee of three citizens, Messrs. George T. Harrison, James S. Whitney and Miss Pendleton, were appointed to consider the advisability of forming an association for advancing public education. This was done to remove it from the field of charity. The Committee invited some twenty men and women, leading citizens, to advise with them, who thus became the nucleus of the Association subsequently formed.

It is by reason of the remarkable results effected in the development of the public-school system of the city of Philadelphia, which are admitted by all to be largely due to the intelligent and enthusiastic efforts of the members of this Association, that it has been thought desirable to devote so much space as is here given to its official history; in order that public-spirited citizens, in other towns and cities, may see by what methods these citizens of Philadelphia were enabled so speedily to bring about such far-reaching changes, and to effect such desirable results.

In the latest issue in Dr. Butler's series of Educational Monographs, March, 1890, entitled "Manual Training in the Public Schools of Philadelphia," just received as this proof comes from the printer, Superintendent MacAlister, the author of the pamphlet, pays a hearty tribute to the good work of this Association; and to that of the Sub-Primary School Society, to whose efforts he credits the establishment of the City Public Kindergartens. He also says: "Philadelphia has been peculiarly fortunate in the possession of associations formed to co-operate with the Board of Education in promoting improvements in the public schools," and recalls the fact that seventy years before a similar body of distinguished citizens effected the founding of the public-school system of the city.

All the changes made since 1880 in the direction of the new departure of the Philadelphia Schools, especially those looking to Industrial Training in schools, etc., have been discussed and aided by this Association in connection with other citizens. The remarkable exhibit of school work shown in May, 1888, referred to on pages 232–236 of this volume, was due directly to this Association which generously undertook to meet all the expenses incurred.

It is claimed, also, that the similar society in New Orleans, Louisiana, and The Public Education Society of New York, are modelled upon their Philadelphia precursor. Surely all this is a somewhat surprising outcome of a report made by a sub-committee of a charitable society in a single city.

From this seminal "report," and from the subsequent eight annual Reports, the following account of this initiation and growth of The Public Education Society of Philadelphia is compiled.

From its record it would appear that the motto of this extremely active association might well be "Altiora Peto," since success in its undertakings seems to serve only as a stimulus to greater conquests; its latest initiative being the publication of an elaborate "Scheme for a Girls' High School," in which it is proposed that the principles underlying the domestic industries of the home, shall be taught to girls; just as those underlying the mechanical industries, are taught to boys in the Manual Training Schools.

The following abstract from the report by Miss Pendleton, gives the origin of the movement which resulted in the organization of the Association.

REPORT OF THE SUB-COMMITTEE ON SEWING TO THE CENTRAL COMMITTEE ON CARE AND EDUCATION OF DEPENDENT CHILDREN OF THE SOCIETY FOR ORGANIZED CHARITY.

It is recognized broadly that opportunities for instruction hitherto offered to all through our Public Schools have failed to prepare the citizen for self-support. The number of persons in our prisons who have received intellectual tuition merely, is found vastly to exceed those who have received instructions in handicrafts. It was thought until very recently that the demand for labor and the great resources of this country, united with our system of government precluded all danger from Communism; which was supposed to be the uprising of the hungry and of the oppressed against those in power who withheld from these the fruits of their labor. But we have been rudely awakened of late from this fatal sense of security, and we recognize in Communism the baneful forces of ignorance and indolence united by artful schemers for dangerous ends. How is this new peril to be met? This is as far as public sentiment has gone; but our statesmen, scholars, philanthropists, and all who are in any way brought to reflect upon the question of popular instruction are deeply aroused to the need of industrial education in its various forms. It has already passed the stage of demonstration, and in the multiplicity of counsels and of methods is only awaiting some formative mind or principle to become an integral part of our system of education; whether within or without the Public Schools.

These are the first thoughts that formulated themselves in my mind from the great amount of matter connected with Industrial education that has passed under my hands since I undertook to furnish your Committee with some data on the subject of Sewing Schools.

This simplist form of manual instruction is so intimately connected in principle and application with the whole question of manual instruction that I have not been able to glean matter in relation to it without covering more or less the whole field. The work seems to be springing up simultaneously in different parts of the country in such an isolated and empirical fashion that there is still much confusion of ideas and consequently of terms. The term manual instruction seems to cover all that is meant by *Technical*, *Handicraft*, *Industrial*, etc.

I have not looked into any of the old charity methods of teaching sewing, as I am convinced that this like all other branches of manual instruction, in the words of Dr. John D. Runkle in his paper on the manual element in Education (page 190, 41st Report of the Board of Education of Massachusetts) must be "approached from the instructive and not from the constructive side." "In each case the details must be worked out simply as an educational problem, and the instruction put in charge of an expert specialist, who understands theoretically and practically the particular manipulations."

SEWING AS TAUGHT IN BOSTON PUBLIC SCHOOLS.

Sewing is taught in the Public Schools of Boston only, so far as I can ascertain; where it was introduced in 1875. I will read you portions of a letter from Miss Lucretia P. Hale on the results of this experiment. "* * * . It is astonishing how much is learned by the instruction of two hours a week, because it is systematic and regular. In this it is a great improvement on Mission Schools which cannot secure a steady attendance. In the Public Schools, we do have the girls there regularly. And we saw the advantage of the reform when this committee took the matter in hand and required that all work should be prepared, thimbles provided (if forgotten by the pupil), needles, etc. Indeed it is now perfectly systematic; not a moment of the hour is wasted; the baskets are brought into the room as the hour begins, the work distributed directly, and the sewing begins promptly just as the writing or any other instruction does. We found that this had not been the case before; if a girl had not her thimble, or if she broke her needle, the teacher put her upon something else.

But now the regular two hours a week give more systematic instruction than could be got at any home, even the very best; and there are many homes where the mothers would not know how to teach it.

Last year an effort was made at retrenchment in the school committee by cutting off the special teachers from the committee on sewing, and petitioners from outside prevented any change. Special teachers are valuable because they prepare the work out of school hours, and because a class of fifty needs the supervision of both the regular class teacher and the special teacher. The good effect of all this teaching is shown in improvement in the homes, as the children bring their lessons there.

In a school in South Boston, in the poorest part of the city, where sewing has, however, the longest been taught, the teacher finds it much easier to teach her younger classes, than a few years ago, because they have learned from their older sisters how to use the thimble."

Miss Hale is well qualified to speak as she has been on the Board of Public Instruction during this interval, was largely instrumental in establishing the Boston School of Art Neddle-work, and has recently compiled from publications prepared for the use of teachers in the public elementary schools of England the admirable Manual on Plain Needle-work which establishes the proper methods and gradation of instruction, and which seems to answer every purpose of a text book on sewing in schools.

SEWING TAUGHT IN GIRLS' REFORM AND CHARITY SCHOOLS.

Sewing is taught in all the reformatory and charity schools for girls whose reports I have examined. Knitting is taught to the younger boys as well as to the girls in some of the reform schools, notably in the unrivaled Public (Reform) School of Michigan. It is an unfortunate circumstance that these institutions are very generally assuming the title simply of industrial schools; thus seeking to remove the stigma of their reformatory character, but by this plausible euphemism it is to be feared they may cast reproach upon other Industrial Schools. Industrial

> Reform Schools would of course, be unobjectionable; and we shall have taken a great step in advance in this country when we learn to call things by their true names.
>
> In the report of the Children's Aid Society of New York for 1878 it is stated that 4,756 girls were in attendance in their twenty day, and twelve night schools, and that 5,177 garments were made by them during the year. Of the 403 girls taught in their Machine School 303 found employment in machine sewing. There were fifteen hundred applications for servants, half of these were for general housework, including washing and ironing; numbers of these could not be supplied. "* * not from lack of girls but because of their incompetence." Then follows a plea for help in training girls.
>
> The question of sewing in schools may be classified under three heads:—First, Sewing in the Public Schools and Reform Schools. Second, Sewing in Industrial Schools. Third, Sewing in Charity Sewing classes, or Sewing in Charity Classes.
>
> In relation to the first of these, sewing in the Public Schools, I will quote from the same paper alluded to above by Dr. John Runkle.
>
> 'On what ground can we justify the introduction of the manual element into the Public Schools? Solely on the broad ground of its intellectual value to all. It is only on this ground that we can justify the introduction of drawing, either free-hand or mechanical into our Public Schools.' * * * 'The manual element either in graphic or mechanical arts must be taught by such methods as will cultivate the other powers through the acquisition of manual skill.'
>
> If the introduction of drawing is justified on the grounds of its fundamental principle and general application in so many trades and of its influence in education, how much stronger are the same arguments in favor of sewing as a part of the education of girls in the Public Schools. After the three R's no other acquirement is of such universal use among women; none other, I venture to affirm, could have so much influence in developing a woman's faculties and her dexterity in the direction of any manual employment; none other is so intimately associated with her needs, her nature, and her character.

Miss Pendleton, then quotes from "Circular No. 2, 1879," of the U. S. Bureau of Education, the remarks by President Wickersham, in the discussion which followed the reading of the paper on "Popular Education in Switzerland," by Mr. John Hitz, the Swiss Consul. Quotations were also given from various educational authorities, among others from an address on "Popular Education in France," by Dr. Wines, and from a paper by Hon. E. A. Apgar, Superintendent of Public Schools for the State of New Jersey, in which the latter opposed Technical Education in Public Schools, but heartily endorsed the study of drawing. Miss Pendleton remarks, in reference to this last paper, in which the value of drawing as underlying all mechanical arts was urged, that "it would seem that sewing, and cooking, are quite as fundamental in principle, and universal of application."

The address by Professor Walter Smith on "Technical Education and Industrial Drawing," given in paper IV, of this appendix, is freely quoted from. Miss Pendleton then urges the adoption of sewing, as follows:

> I would therefore urgently recommend to this committee the propriety of taking into consideration methods tending to the introduction of sewing in our Public Schools.
>
> In relation to sewing in Industrial Schools I can only say in the classic phrase of Mrs. Glass:—"First catch your hare."
>
> If such schools should be established, however, it might be well to associate them with the proposed nurseries or kindergarten as is done in the schools of the Children's Aid Society in New York to enable the older girls on whom devolves the care of younger children to leave their little charges in good hands while they attend the Industrial School.
>
> Sewing in charity classes needs but the endorsement of this committee and the approval of the organization at large to be put into immediate effect.
>
> A high order of charity schools was established recently in Syracuse, N. Y.

The description, by Superintendent Smith of Syracuse, of these sewing classes, as given in the Circular No. 2, 1879, of the U. S. Bureau of Education, follows:

In this it is recorded that, failing in attempts to teach sewing to adults, a sewing school for poor children was held by the ladies in the public school building, every Saturday afternoon, with great success. Miss Pendleton closes her report as follows:

> If the effort to introduce sewing in the public schools fails this is no doubt the best method of charity instruction; but, as a supplement to the instruction given in the Public Schools, or, as a temporary measure, it might be advisable to establish sewing schools under the auspices of the organization. It has been suggested that such might be held in the afternoon in the rooms used for the kindergarten, but beside the extra expense for rent of room, the classes held in the ward rooms would no doubt reach a lower class of children, those whose parents will not enforce attendance at school. The moment schools are suggested to them they make the old excuse: the children are not fit to go, they have no shoes, and etc.; but they are in the habit of going and of sending their children to the ward rooms and do not consider that it requires an especial toilet. More than all the visitors of the ward are interested in seeing that the children attend, it is work done by themselves for their own little charges, and the visitor, the teacher, the little scholar, are all in natural relations to each other.
>
> There are many boys who come to the co-operative Association, and it would be an excellent plan if a whittling school could be established for them.
>
> CHARLOTTE PENDLETON,
> *Chairman of sub-com'tee on Sewing, etc.*

A second report, the following year, contained the direct suggestion which led to the organization of the Public Education Association. From the abstract of this report, issued by the Philadelphia Society for Organizing Charity [as No. 45, April, 1881,] the following extracts are taken:

ABSTRACT OF THE REPORT OF THE ASSEMBLY COMMITTEE ON THE CARE AND EDUCATION OF CHILDREN.

[Prepared and read by Miss Pendleton, Chairman of its Sub-Committee on Compulsory and Industrial Education.]

The subjects which we have considered come under four heads: *What is taught in the Public Schools; What should be taught in the Public Schools; How many children are out of school; and Why they are out of school.*

There were 103,567 children attending the public schools of Philadelphia in 1879, viz:

In the—	Boys.	Girls.
High School	495	....
Normal School	....	975
School of Practice	....	307
Grammar Schools	7,243	7,838
Consolidated Schools	3,869	3,551
Secondary Schools	12,724	13,585
Primary Schools	27,138	25,842

The grade of these schools is not uniform, owing, among other things, to the lack of a superintendent; but some of them have reached a high degree of proficiency. The absence of manual instruction is, however, observable. Drawing is the only instruction given with a view to develop the dexterity of the hand.

This is followed by the statement that 21,000 children are not attending school, 5,000 of them are refused for lack of sufficient accommodation, an unknown number are illegally employed in factories. Of the remainder, some are truants, owing to neglect of parents and the absence of any law compelling attendance; the larger number, however, are the neglected children of the shiftless and criminal classes.

* * * There was in Philadelphia here and there a church, or mission school, but no general recognition of the needs of this class of children, or efforts to provide training schools for them, until last winter, when Visitors of the Charity Organization opened several Kindergarten and day-nurseries. During this winter the 6th Ward Association has gathered a number of children into four schools; two of them kindergarten, the other two training schools for older children. Sewing and house work are the industrial features of these. In other words there are kindergarten, kitchen gardens, day-nurseries and schools, in which instruction in sewing and house work are given to girls and boys. There are two well-managed kindergarten for colored children, and, in view of the lack of industrial training for the colored race in this city, these two schools are a hopeful sign. The rapid growth of this movement has attracted friends of education outside our ranks, and steps are being taken to incorporate the schools.

There is also an admirable kindergarten in Filbert, above 20th, under Miss Burritt, established to test the system practically in connection with the regular system of public instruction.

COMPULSORY AND INDUSTRIAL EDUCATION.

We now approach with diffidence the problems of Compulsory and industrial education.

So far from attacking the public schools, our researches have strengthened our opinion that public schools are the most powerful agents for preparing free communities for self-government; but the school system which sufficed for former years must be modified to meet the new conditions of to-day. The time when industries were taught in workshops and at home, and when letters were the only neglected branch of education, has passed away.

As a basis for our opinions we consulted persons throughout the country especially qualified to advise us. Among them were Mr. Charles Francis Adams, Jr., Dr. John D. Philbrick (Commissioner of Education at the Paris Exposition), Miss Lucretia P. Hale (of the Board of Education of Boston), Mr. J. P. Wickersham (State Superintendent of Public Instruction in Pennsylvania), Mr. Edward T. Steel (President of the Board of Education in Philadelphia), Mr. George L. Harrison and Mr. Charles G. Leland, of Philadelphia.

The queries submitted to them were:

1st. Do you approve of compulsory education?

2nd. If you disapprove, how do you propose to fill the schools?

3rd. If you approve, do you recommend the public school system, or a semi-industrial system?

4th. Do you approve of *drawing*, the *use of tools* and *sewing* in the Public Schools? If you approve of other forms of *manual instruction*, what other?

5th. Do you approve of Frœbel's Kindergarten system, and, if so, do you advise introducing it into the public school system?

6th. At what age should the education of the child by the State begin?

7th. Do you approve of State schools of handicrafts, or of subsidies from the State to such schools?

On matters of theory, such as the power and responsibility of the State, the answers differed widely; from one who believes that the State should only provide the rudiments of education, to another who holds that all education should be by the State; but in matters of practical application *there is absolute unanimity of opinion.* Compulsory education, sewing and other manual instruction; the kindergarten in connection with public instruction; and schools of handicrafts are approved in *every instance,* with the sole exception of the one writer who disapproves of all but rudimentary public instruction; in his opinion schools of handicrafts should be established by private charity or enterprise. It is universally admitted that the *hand* should no longer be neglected in education.

Compulsory education is only directed against *derelict children* and the parents of *neglected children.* But important as the training of such children is, hasty action, in enacting a compulsory law without appliances for its efficient enforcement, would retard the end in view, and the law would be inoperative.

* * * * * * *

The system of elementary education for neglected children devised by the Children's Aid Society of New York, and adopted by the women of the Charity Organization to Philadelphia, is practicable, meets the wants of to-day, and, if properly sustained, offers the channel through which such children are to be reached here.

We earnestly commend to all interested in such philanthopic efforts the "Philadelphia Education Society" to support and multiply these schools, which have been sustained thus far by precarious charity. In New York, the City grants subsidies to the Children's Aid Society, and individuals become responsible for certain schools. The generous donations recently made to our schools lead us to hope for such support from the philanthropists of Philadelphia.

The kindergarten system has received such high endorsement, and has been so thoroughly tested, that we hope it will soon be adopted into the curriculum of our public schools. Children in factories merit the attention of that best of modern Societies—the Society to Protect Children from Cruelty; but we would not recommend any hasty action, as these children may be better off as they are until schools are prepared for them. The factory even is better than the street.

THE NEW ASSOCIATION SUGGESTED.

For all these problems we suggest but one solution, that the friends of education organize themselves into an association to further wise methods of public instruction, and to become a centre of work and a powerful agent for forming public opinion.

The authorities, the Board of Education, and all connected with the administration of the schools, would no doubt welcome such a body as a valuable ally. The hour is auspicious; public attention is aroused to public wants, and good and wise men are in power. Let it not be said that the friends of education were laggards in the movement of reform, when they have so recently witnessed the power of right thinking grow, in a few short weeks, into right acting. Such a society would contribute toward right thinking on questions of public instruction. The field for its work is already indicated, but there are many other pressing questions; such as the compilation of laws bearing upon school questions, as, for instance, a law against relatives of school officers receiving appointments as teachers, etc., and the dangerous condition of the colored population from being practically excluded, under the present system of apprenticeship, from the trades. Such a society should be formed outside of this Organization, and it may be well that a committee should be formed to consider its advisability.

In conclusion, we would draw your attention to the specimens exhibited on the platform from the apprentice schools of Paris, brought to this country by Mr. Geo. L. Harrison. There is one, however, a small bracket rudely carved in wood and varnished, which is of peculiar interest to us, as it was made by a child in one of the London Schools for Neglected Children. Can it be claimed that the gutter child of London who made this bracket is not being educated?

As already stated, the suggestion that an association be formed for the direct purpose of influencing public opinion on questions relating to public education, met with approval and led to immediate action. The first public announcement of this new movement was the issuing of the following circular.

CIRCULAR OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

It is the object of this Association to promote the efficiency and to perfect the system of public education in Philadelphia, by which term is meant all education emanating from, or in any way controlled by, the State. They propose to acquaint themselves with the best results of experience and thought in education, and to render these familiar to the community and to their official representatives, that these may be embodied in our own public-school system. They seek to become a centre for work and a medium for the expression of opinion in all matters pertaining to education, as, for instance, the appointment of superintendents; the compilation of school laws; the Kindergarten in connection with public education; manual instruction—how much is desirable, and what it is practicable to introduce into the public-school system; the hygiene of schools; the adequate pay and the better qualification of teachers; and, above all, to secure, as far as possible, universal education, by bringing under instruction that large class, numbering not less than twenty-two thousand children, who are now growing up in ignorance in this city.

These objects the Association hope to attain through appeals to the local authorities and to the Legislature, and by such other means as may be deemed expedient. The management of the Association is vested in an Executive Committee, consisting of nine persons, elected by ballot from among the members of the Association—three members of said Committee retiring each year; these vacancies to be filled by ballot, and the retiring members to be eligible for re-election.

It will be seen from the concise statements of this circular how comprehensive were the plans of the Association. The Eight Annual Reports which have followed, show how thoroughly and successfully this initial programme has been carried out.

FIRST ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

JANUARY 16, 1882.

When the Sub-Committee of the Committee on the Care and Education of Dependent Children of the Assembly of the Society for Organizing Charity, were preparing their Report on Compulsory and Industrial Education, great interest was shown in their work by those interested in public education throughout the City. Public men and educators here and in other parts of the country gave them valuable assistance. Unexpectedly to themselves, the meetings of this Sub-Committee became a little centre for work, and for the discussion of matters pertaining to public instruction. The library and the statistics of the central office of the Society for Organizing Charity offered peculiar facilities for carrying on their work. Before they had finished their report it was recognized that here was a field of great usefulness; that it should be extended beyond the limits of dependent children to the whole field of public instruction; and that the impetus gained during the work of this Sub-Committee should not be allowed to die out with the completion of their report.

The report, which was read at the meeting of the Assembly on the 7th of March, 1881, contained a clause suggesting the formation of such an association; and the meeting appointed a Special Committee, consisting of Mr. George L. Harrison, Mr. James S. Whitney, and Miss Pendleton, to take charge of the recommendation.

A certain number of persons who were considered qualified to advise in this matter were invited to meet with the members of this Committee. These approved of the formation of such an association. A committee was appointed, consisting of Mr. James S. Whitney, Mr. Charles G. Leland, Mr. Edward Shippen, and Miss Pendleton, to prepare rules and by-laws. The Special Committee of the Assembly reported that steps had been taken to form the Association, and asked to be discharged.

Those persons who had met to discuss the advisability of forming it, became the nucleus of the Association. The Committee on Rules submitted their draft of rules to these persons at a meeting held early in May; Mr. Philip C. Garrett in the chair.

Under the rules adopted at this meeting and subsequent meetings of the Executive Committee, the following Executive Committee were elected:

To serve one year,	Mrs. Robert Harford Hare, Miss Pendleton and Prof. Barker.
To serve two years,	Mr. Robert E. Pattison, Miss Meredith, and Mr. Charles G. Leland.
To serve three years,	Mr. James S. Whitney, Miss Irwin and Mr. E. Coppée Mitchell.

The term of service was determined by lot.

Eight Rules, stating the name, purpose, organization, and times for the stated meetings of the Association, were adopted at this meeting. Those relating to the "object" and the "management" were substantially stated in the preliminary circular issued by the promoters of the proposed society as already quoted here. The other rules relate simply to usual details, except the following "Rule 6;" which states the powers and duties of the Executive Committee of nine, elected by the Association, and divided into three groups serving terms of one, two and three years, respectively. The members of one group are elected each year.

* * * * * * *

RULE 6. The Executive Committee shall elect a Chairman, Secretary and Treasurer; shall fill all vacancies in its body and make all rules for its management; it shall hold stated meetings at least once in three months, at which it shall receive and vote upon the names of all persons proposed for election to membership in the Association; and it shall make a written report to the Association at each stated annual meeting of its transactions for the previous year.

* * * * * * *

THE WORK OF THE SOCIETY.

The Society naturally took up that work with which the members of the Association were occupied when the Association was formed. So far, they have acted only in matters connected with Industrial Education, and the appointment of a Superintendent and Assistant Superintendents of Public Schools. Members of this Association have, as individuals, been able to render some assistance to the Board of Education in introducing sewing into the Normal School. It is as members of the Committee of the Society for Organizing Charity, and of this Association, that they become qualified to render any service in this matter.

A Sub-Committee of this Association is now conferring with the Board of Education, with a view to securing the concerted action of the Board and the Association in an effort to procure an appropriation from Councils for the appointment of a Superintendent and Assistant Superintendents, and to consider the advisability of urging upon Councils the establishment of a school for instruction in the use of tools and studies related thereto, as is now practiced on the Russian system in the Boston School of Technology. This method is conceded to be the best, indeed the only method of teaching the principles of the use of tools. It obviates all the objections raised against apprentice schools. The teaching of trades, as such, with the embarrassment of workshops for actual construction, the objection of competition with regular trade by the sale of articles produced, and the impracticability of teaching a large number of trades, are entirely removed by this excellent method. Under this system the principles underlying the use of tools have been evolved from the cumbersome machinery of actual production, and a person who has passed through the various phases of this system is prepared to enter actively upon any of the many trades in which machinery or carpenter's tools are used,

The fundamental principle of this system and the varied trades for which it qualifies, are so well shown in a letter recently received from Professor Ordway, Vice-President of the Boston School of Technology, that I will read the entire letter.

PROFESSOR ORDWAY'S LETTER.

MASS. INSTITUTE OF TECHNOLOGY,
Boston, Mass., January 2, 1882.

DEAR FRIEND:—The instruction in carpentry is of direct use to those who have to work in wood, because the wood-working tools—the saw, the plane, the chisel, the draw-knife, the hammer, the auger, the square, the rule, and the line—are used in many trades. One who has had this practice may become a house-carpenter, a ship-carpenter, a cabinet-maker, a wheelwright, a carriage builder, or a millwright.

The wood turning and pattern making extend the range to these very important branches

Though we do not at present include wood carving in our course, we may say that one who has gone through with carpentry and wood turning, having had at the same time instruction in drawing, is well prepared to learn the art of carving.

The foundry work which the students do, gives them a good beginning in the business of the iron, brass, and bell founders.

Blacksmithing is essential for the boiler maker, the nail and bolt maker, the chain maker, the cutter, and the iron bridge builder.

The vise work is important for locksmiths, gunsmiths, and watch-makers, and of course for the general machinist.

The engine lathe work is that of machinists, and is a good preparation for taking care of any kind of machinery.

We ought to have a paint shop and a department of soldering and brazing, but we are at present short of room. I hope we may sometime get more land and add these things.

Our course makes no provision for the textile manufactures, for the work of the saddler, the printer, the bookbinder, the engraver, the brick-layer, the plasterer, the tanner, the currier, the glass-blower, or the chemical trades. But the general training of the hand and the eye gives a dexterity and accuracy which lies at the foundation of all good and profitable work.

In all the arts the hands must be used as well as the brain, and the handling of tools gives a more practical control of the muscles than gymnastic exercises, or no exercises at all.

Nature indicates the use of tools to the growing boy, who must have at least his jack-knife. It is important that right habits be formed, and that the boy should use his muscles to some purpose instead of working at random. Training in the accurate use of tools affords a good mental discipline aside from its every-day practical use.

Yours, very truly,

JOHN M. ORDWAY.

Professor Ordway has informed the Secretary of this Association that a graduate of this school, after two years of work in practice and related studies under this method with one year of experience in the trade which he may select, is better qualified than by an actual apprenticeship of five years, with the immense additional gain of studies and drawing which have accompanied his course in practice, and the broad and varied character of his training which render him independent of the precarious demands of any one trade.

Professor Ordway thinks this system peculiarly suited to be grafted upon public education. He is seeking to have a State Normal School, on this system, established in Massachusetts, and hopes to see it a part of the Boston system of public education.

Professor Ordway is especially qualified to form an opinion in this matter. He has the practical experience of an apprenticeship of five years, actual connection with a manufacturing industry, and the experience in matters of education of a professor in, and Vice-President of, the School of Technology.

He thinks that this method should be taught in a school of the grade of a high school, and that it should be a post grammar school course of three years. As there is not accommodation in the high school for more than half the number of pupils applying, and the propriety of establishing a second high school has been suggested, it would seem that no better time could be selected for establishing such a school. It would give young men who contemplate entering any of the trades the opportunity of securing a high order of mental instruction, which would at the same time bear directly upon their pursuits in life.

Chemistry, natural history and drawing are some of the studies embraced in the course.

* * * * * * *

The following paragraph shows the previous peculiar organization of the public school system of Philadelphia.

Before entering upon a consideration of the objects specifically enumerated in the circular, it is necessary to state the general condition of public education in Philadelphia. The public school system of Philadelphia is supported by City taxation, is entirely independent of the control of the Superintendent of Public Education of Pennsylvania, and subject only to the laws of the State. The general administration of this system is in the hands of a Board of Education appointed by the judges of the Courts of Common Pleas, and serving without remuneration. Each ward has a Board of School Directors, serving also without compensation and elected by the people.

It is estimated that the number of children of school age not attending any school has increased and in 1882 numbers 27,000 or 28,000. The objects of the Association, as given in the Circular, numbering seven in all, are then separately recited with comments; the final one, which closes the report, is given as follows:

THE EDUCATION OF ALL CHILDREN DEMANDED.

7th. *The question of universal education*, or of bringing under instruction that large class who are now growing up in ignorance in our midst, is one which occupies most earnestly the attention of this Association. The Committee on Care and Education of Dependent Children, and that admirable Society recently formed, and called the Sub-Primary Association, have taken up this matter and are establishing Kindergarten and half-time schools. Many children of this unfortunate class will no doubt avail themselves of these schools, but it is doubtful whether all will voluntarily do so. In Boston there is an efficient compulsory education law; in New York there is such a law on the statute books, but it remains inoperative, owing to the lack of any provision for applying the law. There are 40,000 children growing up in illiteracy in Pennsylvania, exclusive of Philadelphia, which makes an aggregate of illiteracy of between 60,000 and 70,000 children for the whole State, if we accept as correct the only data yet furnished on this head. The question of school facilities is closely allied to this question of universal education. Philadelphia refuses instruction annually to several thousand children owing to lack of these facilities. A city that is increasing in population at the rate of 25,000 persons a year must needs be on the alert to keep the schools equal to these rapidly increasing demands.

It is difficult to determine which of these various matters is of most importance. We cannot lop off any one branch, and say this is vital to the community. From the roots far down in the sub-primary schools to the topmost flower of the University scholarships this sytem is an integral whole. Roots, trunk, branches, leaves and flowers are only new phases or developments of the same life principle.

This Association has been formed with a limited number of members for the purpose of securing the intelligent interest and efficient work of the members, and to avoid large and cumbersome machinery. It hopes to become a centre for work, a medium for the expression of public opinion, and an auxiliary of all organizations occupied with matters pertaining to public education. If it shall be found advisable to increase the membership beyond single additions at a time, affiliated societies might be formed throughout the City. It is at present thought that the society should be small in numbers, and executive in character. Those who have been invited to join the society have been carefully selected for their qualifications for usefulness in such an organization.

The importance of this question of public education cannot be overestimated. Stein said long ago that "What is put into the schools of a country comes out in the manhood of the nation afterwards." Perhaps no other statesman, with the exception of President Garfield, has so well understood the influence of education in moulding the destinies of a people. President Garfield stated in his inaugural that in his opinion "the perpetuity of our institutions is endangered unless education is made co-extensive with the suffrage."

The Second Annual Report of the Executive Committee dated January 13, 1883, opens with the following lists, the first given, which are quoted here in order to perpetuate the honored names of those public spirited citizens who thus actively interested themselves in the needs of education, and endeavored to bring about desirable changes, so as to bring up the Common Schools of Philadelphia in line with those of the most advanced communities.

LIST OF THE OFFICERS, COMMITTEES, AND MEMBERS OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

EXECUTIVE COMMITTEE.

Mr. JAMES L. WHITNEY, *Chairman*,
Miss PENDLETON, *Secretary*,
Mr. DALTON DORR, *Treasurer*,
Mrs. ROBERT HARFORD HARE,
Miss IRWIN,
Miss C. K. MEREDITH,
Mr. PHILIP C. GARRETT,
Mr. E. COPPÉE MITCHELL.

COMMITTEE OF CONFERENCE WITH BOARD OF EDUCATION.

Mr. JAMES L. WHITNEY,
Mr. PHILIP C. GARRETT,
Mr. E. COPPÉE MITCHELL,
Mr. EDWARD SHIPPEN,
Mr. ROBERT E. PATTISON,
Mr. DALTON DORR.

COMMITTEE ON LAWS.

Mr. EDWARD SHIPPEN,
Mr. DALLAS SANDERS,
Mr. WAYNE MACVEAGH,
Mr. PHILIP C. GARRETT,
Mr. A. SYDNEY BIDDLE.

Committee on Schools.

Mr. E. Coppée Mitchell,

Mrs. Mumford,
Mrs. W. C. Head,
Miss Florence Kelly,
Miss Cornelia Hancock,
Miss Anna Hallowell,
Mr. Louis Wagner,
Miss Pendleton,
Mrs. Gillingham.

Corresponding Members.

Mr. Edward T. Steel,
Dr. William T. Harris,
Dr. John D. Philbrick,
Miss Lucretia P. Hale,
Mr. George L. Harrison,
Prof. John M. Ordway,
Charles Francis Adams, Jr.,
Mademoiselle Matilda Demmler.

List of Members of the Public Education Association of Philadelphia.

Rev. C. G. Ames.
Mrs. C. G. Ames.
Wharton Baker.
Rachel L. Bodley, M. D.
A. Sydney Biddle.
Rudolph Blankenburg.
Addison B. Burk.
Charles Cadwalader, M. D.
Richard A. Cleeman, M. D.
Dalton Dorr.
Philip C. Garrett.
Mrs. W. J. Gillingham.
Miss Anna Hallowell.
Miss Emily Hallowell.
Mrs. Robert Harford Hare.
Mrs. Elizabeth S. Head.
Miss Hancock.
Miss Irwin.
William W. Justice.
Miss Florence Kelly.
Charles Godfrey Leland.
Morris Longstreth, M. D.
Mrs. Dundas Lippincott.
Edward Lewis.
E. Coppée Mitchell.
Miss Meredith.
Rev. Joseph May.
Miss Morais.
Mrs. Mumford.
Miss Pauline Neidhard.
Isaac Norris, M. D.
Miss Pendleton.
His Excellency Robert E. Pattison.
William Pepper, M. D.
Judge William S. Peirce.
Joseph G. Rosengarten.
Henry Reed.
Miss Robins.
Edward Shippen.
Daniel Steinmetz.
Dallas Sanders.
Miss Shoemaker.
Prof. R. E. Thompson.
Wayne Mac Veagh.
James S. Whitney.
Samuel Wagner.
Mrs. Owen Jones Wister.
Mrs. Caspar Wister.
Ellis D. Williams.

SECOND ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

The Committee of Conference with the Board of Education report, through their Chairman, that:

"The special committee appointed to confer with the Board of Education on the appointment of Superintendents and the establishment of a Technical School report that they held, during the early part of the year, a conference with a committee of that body appointed for the purpose, in which both these subjects were very fully discussed. The committees of the Board gave us a very full and courteous hearing, and appeared thoroughly impressed with the importance of these questions and the necessity of securing in some way the results which we urged would follow favorable action in the directions proposed.

"At a subsequent meeting of the Board of Education a By-Law was adopted constituting the office of Superintendent and Assistants, and City Councils have since made an appropriation of $15,000 for their salaries for 1883.

"At the last meeting of the Board, held 9th inst., a communication from the Spring Garden Institute was presented, offering to provide at a moderate cost industrial and art training to the pupils of the Public Schools. This communication is now under consideration by a committee of the Board.

"Without knowing how far these facts are due to the appointment of your committee, we yet may congratulate the Executive Committee on the facts themselves."

In the circular of this Association it is stated that "we hope to become a centre for work and a medium for the expression of opinion in matters pertaining to education." It is not too much to claim for the Association that it has realized this object in the matter of superintendence. The very general feeling throughout the community in favor of such supervision was formulated by them; the Association, through this committee, was the medium of expression of that opinion, and they have been somewhat instrumental in securing favorable action in this important matter.

The question of a choice of Superintendent is the keystone in the whole arch of Public Education. The community that has a large idea of public education will place a great man at the head of the schools and will give him sufficient liberty of action to insure the success of his measures. A wise man once said that he had always found a great man or woman behind every great work. It is the same in the schools, no matter how perfect the system may be, it will be no greater in its results than the men and women who administer it. The importance of the choice cannot be overestimated. There are a very few names that naturally suggest themselves to those acquainted with the subject.

In view of the many important subjects connected with education which will naturally present themselves for the consideration of all who are interested in public education at this juncture, the Executive Committee venture to recommend to the members of the Association certain papers which they have found useful in aiding them to form an intelligent opinion on the matter of superintendence, etc. It is to be hoped that the Association will inform themselves of these questions, that they may be able to form a critical opinion of the measures from time to time recommended by the committees. In pamphlet No. 2, 1880, of the circulars of information of the Bureau of Education on the Proceedings of the Department of Superintendence, etc., Dr. William T. Harris, lately Superintendent of Public Education in St. Louis, and Mr. Smart, Superintendent of Public Education in Indiana, have valuable papers on the Tenth Census from an Educational Point of View, and the Best System of Education for a State. These important papers are most valuable to all who seek to acquaint themselves with matters of public education. Dr. Harris, in his paper on the Tenth Census from an Educational Point of View, shows a wide range of vision and a firm grasp of details, worthy of the old Greeks in comprehensiveness and profound simplicity."

The report of the Committee on Laws with their draft of the proposed bill is recited; and the subject of a revision of the school laws is then considered at some length.

* * * * * * *

EXECUTIVE COMMITTEE.

There have been three resignations from the Executive Committee: Mr. Charles Godfrey Leland, owing to pressure of work in connection with the introduction of his method of art instruction in the public schools here and elsewhere; Mr. Robert E. Pattison, owing to his election to the office of Governor of Pennsylvania, and consequent absence from town, and Prof. Geo. F. Barker. The places made vacant by the resignation of the two first-named members of the Executive Committee have been filled by the Committee in the manner prescribed in the By-Laws. The latter vacancy, occurring just before the annual meeting, has been left for the Association to fill by election to-day.

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The increase of work and the employment of a clerk is noted, and various plans for future usefulness considered.

CORRESPONDING MEMBERS.

In seeking to form intelligent opinions in matters of education, the Executive Committee have found occasion at various times to consult with expert educators. They have, therefore, added a certain carefully selected number of corresponding members to the Association. The advantage of advice from such men as President Gilman, of Johns Hopkins University; Dr. Harris, lately Superintendent of Public Education in St. Louis; of Prof. Ordway, Vice President of the School of Technology, of Boston; of Dr. Philbrick, Commissioner of Education for the United States at the Paris Exhibition, and others cannot be overestimated. These have all been consulted by, and have all advised the members of, this Committee at various times.

The subject of Illiteracy is then considered at length, the final paragraphs on this topic follow.

* * * * * * *

Can it be doubted that the State which should secure for these] children the benefit of education and training in school, would be extending the ægis of protection over those little ones? How to do it is a difficult problem. We may complacently moralize over the fatuity of the Fathers, who left Slavery in the body of our politics for a future age to solve the problem when it had grown to gigantic proportions; we may shake our heads wisely over the problem of illiteracy in the South; but, as of old, the Greeks are at our doors. What do we propese doing here in Philadelphia?

There is a singular apathy in this city on this subject. Other cities are at least seeking to solve the problem. Congress is alive to the importance of the question. As yet Philadelphia scarcely realizes that there is such a question, with a very few honorable exceptions, notably Mr. George L. Harrison. May he live to see all these neglected children, for whom he has been so deeply concerned, gathered into the schools of this city. Mr. Smart, in the paper already quoted from, states that: "If it were left to each locality to establish schools or not, at its will, the system would in no sense become a general system. A permissive system would soon become no system at all," and on

"*The doctrine of equalization.*—All the citizens of a State are governed by the same system of laws. The laws of the State are an outgrowth of the intelligence of the citizens. A limitation of intelligence is a limitation of citizenship, and ignorance on the part of some is an abridgment of the liberty of others. Hence, every citizen is benefited by, and therefore has an interest in, the intelligence of every other citizen.

"Thus an equalization of benefits arises from a uniform school system; upon this is based the doctrine of equal obligation."

THE INCREASE IN NUMBER OF ILLITERATE CHILDREN IS A MENACE TO THE COMMUNITY.

If there are, as is estimated, from ten to twelve thousand boys growing up in this city who can neither read nor write and are therefore not qualified to make any intelligent use of the ballot, it is evident that one of two things must occur sooner or later; these men, increasing in ratio as time goes on, will prove a serious menace to this community, or will be excluded from the use of the franchise. Professor Goldwin Smith has already advised this latter course as the best method of inducing parents to send their children to the schools and as the wisest safeguard of the suffrage; but it is not likely that any large number of parents who are now indifferent to the welfare of their children would be induced simply by this additional deterrent motive to place these children at school, and it seems more in the spirit of this age and this people to extend education than to restrict the suffrage.

The objection has been made that the labor of these children is essential to the parents. We have seen by the table furnished us by the Bureau of Children's Aid that there is a large class who neglect their children, to whom this argument cannot be made to apply. For the rest, however effective this argument may be in England, where it is also used, it is not of general application here. In rare instances, such as the illness of parents or the widowhood of the mother, it is feasible to make exceptions, but even here the child may get rudimentary instruction in the kindergarten or the primary school before reaching the age when he or she can earn wages for the parent; and the baby who has heretofore required *minding* may now be placed in a day nursery. In considering this matter are we not apt to overlook the rights of the child in our too great consideration for the privilege of the parent? Is it not a reminiscence of the old patriarchal order of society, when it is still deemed the prerogative of a parent to doom his child to ignorance? And do we imagine that any one of the 28,000 children now deprived in their unreasoning infancy of such opportunity would on reaching maturity be found to consider that his liberty had been unlawfully abridged? If, on the other hand, this evil is left without remedy, it is not too much to anticipate that some historian of the future may point out the fact that a large number of the people were allowed to grow up in ignorance, and that this undisciplined populace became a dangerous class, who in times of depression or public peril fell an easy prey to demagogues and political schemers, and were the ultimate cause of the downfall of the Republic.

KINDERGARTEN.

The Sub-Primary School Society has invited our co-operation in bringing this subject into public notice. These schools have passed the stage of experiment. They aim to reach children below the school age. We suggest that one of the meetings of this Association shall be devoted to this subject. The S. P. S. S. will furnish a paper for the occasion. * * *"

The report closes with the following in reference to Industrial Art, etc.

INDUSTRIAL ART.

It is hoped that the Association will make some effort to draw public attention to the Pennsylvania Museum of Industrial Art. The exhibits of this museum are invaluable to the decorative and industrial art student, and the high salaries commanded by the graduates from their School of Design testify as to the excellence of this department. It may be well not to overlook the claims of this school in relation to normal training in design.

A member of this Association who was interested in the introduction of sewing into the Normal School, reports that this measure has been completely successful. The students are in their second year and are now receiving instruction in cutting and fitting on the Taylor system, so called for the originator, and will graduate in sewing, just as they do in other branches, at the conclusion of the course of four years. Sewing is about to be introduced into the School of Practice.

The School of Industrial Art, of which Mr. Leland is the originator and the director, will, no doubt, develop a system of instruction in the principles of decorative art which will render it practicable to introduce it into the schools generally, or such a special school as is suggested in the central schools.

In conclusion we suggest that this Association agree to meet at stated intervals for discussion, the subjects to be fixed beforehand, such as *Revision of Laws; Proposal to Raise Funds for Competitive Plans.*

Central Schools—for which Mr. Lewis, of the Board of Education, shall be invited to prepare a paper.

The Methods of South Kensington Museum—Mr. Dalton Dorr to be requested to furnish a paper on this subject.

The Subject of Kindergärten—The Sub-Primary School Society to be invited to furnish a paper on this subject.

Then *Illiteracy*, and any other subject which may be deemed advisable.

Miss PENDLETON, *Secretary.*

JANUARY 18, 1883.

The Treasurer briefly reports for the year subscriptions of $48.00 received and payments of $4.50.

THIRD ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION.

JANUARY 21ST, 1884.

The Society for Organizing Charity co-operated with the Public Education Association to procure public discussion of the revision of school laws, for which the Assembly of that Society served as a nucleus: * * * . Improvement in the schools may readily be traced from the creation of the Central Board whereby sufficient unity was attained to make possible the appointment of a Superintendent. If the Public Education Association has in any measure contributed toward securing a Superintendent who has so happily vindicated the usefulness of the office itself, they are then morally pledged to procure, as far as may be, laws which will make his work effective.

A sub-committee of the Executive Committee was appointed in May last, and charged with the duty of organizing a course of lectures bearing upon various problems of Public Education.

The Secretary reports that four lectures were delivered in this course during November and December, as follows:

PUBLIC EDUCATION,—by James Mac Alister, Superintendent of Schools of the First School District of Pennsylvania.

THE OLD AND THE NEW EDUCATION,—by G. Stanley Hall, Ph. D., Lecturer on Pedagogy at Harvard College, and on Psychology at the Johns Hopkins University.

HANDWORK IN EDUCATION,—by Professor John M. Ordway, Chairman of the Faculty of the Massachusetts Institute of Technology.

THE FINANCIAL AND ADMINISTRATIVE ASPECTS OF PUBLIC EDUCATION,—by Professor E. I. James, of the Wharton School of Finance, of the University of Pennsylvania.

The expense of these lectures was defrayed by a special fund. There have been requests made to the Executive Committee that this course be continued, and subjects for other lectures suggested. * * *

Our society is attracting attention elsewhere, and an association similar in character has recently been formed in New Orleans, to which we have, by request, furnished Reports, By-laws, and other papers of this Society. If special committees could be formed in these two Societies looking to the introduction of an exhibit of handwork in schools at the Exposition which will take place in New Orleans during the autumn of 1884, it is believed that the value of training the eye and hand in education would thereby be demonstrated.

Educators admit generally that the Russian method in the use of tools may be introduced into the system of Public Education. The elimination, by this method, of the principles underlying the use of tools gives it an educational value which does not appertain to empiric methods of manual training. * * Wherever the Russian system has been introduced into the higher grades of Public Schools the experiment has been so successful that it has been continued and extended.

* * * * * * *

A resident of St. Louis has recently left by will to the Washington University of that city fifty thousand dollars for the maintenance of these schools. The value of private endowments to extend the scope of public education is incalculable. Surely there can be no objects for endowment with stronger claims upon the American citizen than Kindergärten, Manual Schools or Scholarships; which would enable one or more graduates of the city scholarships of the University of Pennsylvania to carry their studies beyond the college course, either at the Johns Hopkins University, the Berlin, or other Universities of the Old World, or at the Pennsylvania University.

School architecture and hygiene are too much overlooked at this time. The grouping of schools with the object of securing certain academic advantages will doubtless come before many years. The setting apart by Councils of property on which it is intended, at some future time, to erect a group of Central High Schools, is a step in this direction. The advisability of connecting with such a school instruction in the Russian system in the use of tools has already been referred to. We recommend this important subject to the consideration of the Association.

C. PENDLETON, *Secretary.*

FOURTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION, OF PHILADELPHIA.

MONDAY, *January 26th*, 1885.

The Secretary of the Lecture Committee reports that a course of three lectures has been delivered under the auspices of the Association, as follows:

Friday, December 5th, 1884,—WHEN AND HOW SHOULD THE EDUCATION OF CHILDREN BEGIN?—by James Mac Alister, LL. B., Superintendent of Schools in Philadelphia;

Saturday, December 20th, 1884,—PRINCIPLES OF HOUSEHOLD ECONOMY AND RELATED STUDIES,—by Miss Maria Parloa;

Friday, January 9th, 1885,—A YEAR'S EXPERIMENT IN PRIMARY EDUCATION INTENDED TO LEAD TO A SUPERIOR EDUCATION,—by Mrs. M. Putnam Jacobi, M. D.

The Executive Committee note with satisfaction the continued interest shown in these lectures, and recommend that a course be organized for the winter of 1885 and 1886.

If such of the lectures as bear upon immediate issues in the practical administration of systems of education were published in pamphlet form by the Association, it is believed that their marked local influence could be widely extended through the country. The Actuary of the Bureau of Children's Aid has asked for copies of the address of Mr. Mac Alister. In her travels through the State she finds all the agencies and societies interested in the care of children prepared to introduce day nurseries and Kindergärten, and seeking information on Kindergärten methods.

The lecture of Mr. Mac Alister meets this demand for practical information. The remarkable lecture by Dr. M. Putnam Jacobi would be a valuable addition to pedagogic literature.

During this year, as in former years, the Association has been applied to for information on the various matters with which it has become identified. The Executive Committee have furnished such information to the Industrial Association of New York and to the corporators of a school in Louisiana, who have received a subsidy from the State of forty thousand dollars, to be by them applied to the industrial education of women. The information sought relates generally to manual instruction. * * The Executive Committee presented a petition to Councils in support of the proposed school for the instruction of boys in the use of tools. The happy results attending the introduction of sewing into the Normal School have more than realized the anticipations of the most ardent advocates of a system of manual training for girls, which shall bear as close relation to their usual occupations as that of the use of tools to those of men. * * *

PROGRESS MADE IN INTRODUCING INDUSTRIAL TRAINING.

In looking over the year 1884 we find that instruction in sewing has been introduced into the girls' departments of the Grammar Schools; and that Councils have appropriated seven thousand five hundred dollars for the establishment of a school for boys in the use of tools. It is stated in the circular of this Association that the chief objects for which it was formed were to assist in securing the superintendency, manual instruction, universal education, and the revision of the school laws. It will be seen that the two last named are the only objects that remain to be attained. In the direction of universal education the want of school facilities for those attending is an impediment to any project for extending the enrollment. The Sub-Primary School Society, which was organized about the same time as our own Association has accomplished valuable results in the twenty-seven Kindergärten and day nurseries established by the Society.

The revision of the school laws is the subject pressing most immediately upon the consideration of this Society, as well as of all persons and agencies occupied with the question of public education in this city. * * *

C. Pendleton,
Corresponding Secretary.

FIFTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

Monday, *January 25th*, 1886.

The Lecture Committee, through the Chairman, report that two demonstration lessons were arranged by the Committee on Household Economy, and were delivered by Miss Corson in May last at the Normal School before the Normal School Committee of the Board of Education. The Committee on Household Economy were gratified by the reception extended to them by the Normal School Committee, and with the favorable impression made by the demonstration lessons. They are encouraged in the belief that one more department of Household Economy will shortly be added to the curriculum of the schools. Professor Woodward, of the Washington University Manual Training School, delivered an address on Manual Training in connection with General Education, under the joint auspices of the Social Science Association and the Public Education Association. This lecture is now in the hands of the Social Science Association for publication.

Two objects named in the circular of the Public Education Association among the objects for which the Association was formed remain to be attained. They will demand the earnest consideration and the concerted action of all agencies interested in the betterment of the schools. Universal education, the existence of illiteracy and the solution of the problem of bringing illiterates under the unfluence of education are important questions for the consideration of this Association and of the deliberative bodies of the charity organization. The Women's Conference is already engaged in considering the relation of the schools to the neglected juvenile population. Illiteracy exists only among neglected children, and the women visitors of the Charity Organization are more advantageously placed than any other body to assist in forming an opinion as to the actual wants of these children, and the advisability of withdrawing them from the factory and home service to place them in school. There is on the statute book an ineffective law against the employment of children under fourteen years of age.

The practical step which must precede all intelligent action in this matter is the taking of a school census, and the Executive Committee submit to the Association the following resolution:

"It is moved that this Association take action, in connection with the approaching recommendation of the Board of Education, requesting Councils to make an appropriation for the purpose of taking a school census."

The Committee elected Mr. W. W. Wiltbank and Mr. A. Sydney Biddle to fill the vacancies in their numbers occasioned by the resignations of Mrs. Dundas Lippincott and Mr. James S. Whitney.

The Executive Committee are very sensible of the great loss to the Society caused by the death of Mr. George L. Harrison, who was one of the Committee of three appointed by the Assembly of the Charity Organization to consider the advisability of forming, and who actively encouraged the formation of, the Public Education Association.

C. PENDLETON,
Corresponding Secretary.

SIXTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

FRIDAY, *February 18th*, 1887.

Owing to a misapprehension in regard to the preparation of the report, it became necessary to defer until this time the annual meeting of the Society, which, under the rules, should have been held on the fourth Monday of January.

During the past year, Mrs. J. Dundas Lippincott and Dr. Herbert M. Howe have been elected to membership of the Executive Committee to fill vacancies.

Mr. William W. Justice was elected to the chair, to fill the vacancy caused during the previous year by the resignation of Mr. James S. Whitney, incidental to his appointment to membership in the Board of Education, and Mr. William W. Wiltbank to the vacancy created thereby in the Recording Secretaryship.

Mrs. J. Dundas Lippincott was re-elected to the Treasurership.

We are bereaved by the death of Professor E. Coppée Mitchell, one of the organizers, and a member, of the first Executive Committee of the Society. * * * .

After reciting the objects of the Association as given in the Circular the report proceeds.

There were those who felt that the scope was too comprehensive, the field too large; but, on reviewing the work of the Society at the close of the sixth year of its existence, we find that it has made use of all the means, and that its work may be traced in all the various departments therein set forth, with the single exception of Kindergärten in connection with public education. This ground was completely covered by the Sub-Primary School Society.

These two societies, one growing directly out of the conditions revealed by the investigation of the Committee of the Society for Organizing Charity on the Care and Education of Dependent Children, the other having had an independent rise, but not less in sympathy with the object of that committee, occupy the broad ground of education untrammeled by the limitations of a charitable association.

In the first year of their institution it was proposed to unite these two kindred efforts, but this was abandoned owing to the alien functions of the administration of a chartered system of schools of the one, and the purely abstract functions proposed to itself by the other.

The recent transfer of the Kindergärten system of schools to the Board of Education, is the culmination of the untiring labors and the generous contributions of the members and friends of our sister society. In this department alone of the object set forth in the circular we have had no part.

We have appealed to the local authorities and the legislature on various occasions too numerous to recapitulate; we have conferred with the Boards of Education and committees of Councils; we have instituted three several lecture courses bearing upon all the subjects set forth in the circular; we have set in motion a project to procure a census of the school population, looking toward the solution of the problem of bringing the entire juvenile population of the city under instruction.

It will be readily perceived that there have been many co-operating agencies at work in Philadelphia during the past five or six years tending to the advancement of public education in this community; and with the result that Philadelphia stands to-day in the front rank of all American municipalities on the various lines of what is called the new education.

If we ask ourselves what has placed us in this advanced position we find the two controlling causes to be: *first*, the wise law which raised the system above political complications by providing that members of the Board of Education be appointed and not elected; and *secondly*, the intelligent, devoted, and disinterested labors of the present president, supported by the unflinching and zealous co-operation of the members of that Board.

This Society, originated without reference to that Board, has found their truest means of advancing their objects to be in its support; supplementing their work of administration by becoming a channel for the expression of public opinion and an agent for bringing before the community from time to time the questions at issue.

Owing to the protracted illness of the chairman of the Committee on Laws, they have been unable to present the bill which they had proposed to offer at the present session of the legislature, looking to the further unification of the school system.

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Reference is then made to certain proposed legislation. The Report closes with the following summary of recent desirable changes effected.

It will not do to underestimate the extent of the calamity which would befal this community in case of injudicious legislation on the subject of education.

Not only are the welfare, the education, and the formation of character of the children attending these schools—of whom there are now enrolled one hundred and ten thousand—continuously at stake, but there is involved that truest of all forms of protection to the industries and liberties of a community, a system of education which will tend to place us in the lead in that near future when the growing competition and struggle for supremacy must be largely affected by their character of education.

A brief statement of what has been accomplished in public education will not be out of place in this report.

1. The institution of the department of superintendence, with the recent increase of force by which the efficiency of this department has been largely augmented, and thoroughly organized.

2. The selection of a superintendent whose ability is recognized as well in the collegiate centres as in the field of public education.

3. The introduction of sewing into the curriculum of the Normal School, and its more recent introduction, based upon the success of the earlier experiment, into the lower grades of schools by which twenty-five thousand girls are now receiving regular, systematic instruction in needlework.

4. The universal acknowledgment that the most complete and satisfactory exhibition of this work ever made in the country was the exhibit of the sewing done in the public schools of Philadelphia made in the spring at the Industrial Exhibition at New York.

5. The institution of the Manual Training School, now entering upon its second year, the recent increase of its facilities for instruction and the number of teachers, by which two hundred and fifty boys are now under this instruction.

6. The revision of the course of instruction by which the primary, secondary, and grammar schools have been brought into accordance with the most advanced and approved methods of instruction.

7. The introduction of the study of government, with the object of preparing pupils for the intelligent exercise of their rights as citizens; and which has met with very general approval.

8. The progress of the reorganization of the schools under supervising principals, by which a considerable number of the largest schools have been placed under the direction of able and experienced principals.

9. The lectures of the superintendent on the history and philosophy of education, which have been largely attended by the teachers during the past year, and in which they continue to manifest great interest.

10. The assumption by the Board of the Kindergärten system of schools, rendered possible by the liberal action of Councils in appropriating $15,000 to enable the Board to make a start, which will no doubt demonstrate the advantages of carrying the work of training to the masses of young children who have heretofore been outside of the reach of the public school system.

11. The vindication of the present method of selection of the Central Board, by the recent appointment to that Board of a woman so eminently qualified to assist in the administration of public education.

We note with satisfaction the recent act of Councils by which the pay of teachers has been increased.

In conclusion we would recommend to your consideration the project for procuring a school census; and we especially urge upon you at this meeting, to devise a plan for calling forth an expression of public opinion on the matter of the bill now pending to abolish the Central Board.

C. Pendleton,
Corresponding Secretary.

SEVENTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

Monday, *February 13th*, 1888.

The work of this Association in 1887, if not more useful, is more apparently our work than that of any previous year.

Members of your Executive Committee, fearing to lose by delay the impetus gained during the past two years volunteered to contribute $1500 to meet the expenses of a school in cooking for the session of 1887–1888.

The Board of Education accepted, and, as a result, we point to the admirable classes in cooking at the Normal School. A visit to this school will be more convincing than any statistics upon the subject. The class instructed is the third of the High School grade; so that it is not given to the class in Normal training proper. In view of the probable approaching demand for teachers, this Committee hope that the Board of Education may deem it advisable to give to the girls who go forward next winter from this class into Class A or the fourth and graduating year, further, special instruction in Normal methods of Cooking.

The State Commission appointed by Governor Beaver to examine into the question of manual training will submit their report January, 1889, and if they recommend the introduction into the girls' schools throughout the State of any form of household economy, the question of supplying teachers will become an important consideration. If this class shall receive Normal instruction in cooking as well as in sewing, they will have new avenues of usefulness and profit opened to them, and Philadelphia will have rendered a valuable service to the State by supplying this need.

The projectors of this school and the Board of Education must feel encouraged and stimulated by the interest shown in it, and especially by the high commendation of the members of the Commission. When sewing was introduced in 1881 into the Normal Schools, we then defined our purpose and scope as being to evolve, or work out, in our own Normal School a system of instruction in the elements of household economy and related studies which shall hold the same relation to the education of girls, as that of the Russian method in the use of tools as applied to the education of boys. Our hopes seem to be rapidly realizing themselves and the results are of general application.

The Treasurer has submitted to you the report of the expense connected with the introduction of cooking into class B of the Normal School, for the winter of 1887 and 1888.

Our satisfaction at the recent betterment of the schools is not lessened, but rather increased, by the reflection that we have been only one of the agencies concerned therein; for we are thereby convinced that these efforts are in conformity with the trend of the age. As the workers within and without the official machinery become better acquainted with their scope and limitations, they must recognize more and more the value of all these complex but harmonious agencies. The President and his Associates in the Board of Education, Members of the Local Boards, the Superintendent and his Staff, the Kindergärten or Sub-Primary Association Society, and the Public Education Association have seen the attainment of many of the objects set forth nearly seven years ago in the circular of this Society. When we look back and recall the fact that there were then no Superintendents, no Supervisory Principals, no Kindergarten, no Manual Training School, no Sewing and Cooking Classes, it is with justifiable pride that we call the attention of the public to the present condition of the schools.

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C. Pendleton,
Corresponding Secretary.

EIGHTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE PUBLIC EDUCATION ASSOCIATION OF PHILADELPHIA.

JANUARY 21*st*, 1889.

The report of the Treasurer will indicate the amount and the direction of the work accomplished during the past year by this Association.

The experimental classes in cooking in the Normal School, of which we assumed the expense, proved admirably successful, and have been continued as part of the regular curriculum, under an especial appropriation of Councils.

We then agreed to meet the expenses for one year, of a certain number of central classes in cooking, in the Normal School building from Grammar Schools grades; and these classes have proved so successful, the demand far exceeding the facilities of this one Central School, that we invite you to consider the advisability of offering a sufficient sum to the Board to enable them to open one or more Central Schools of a like character, so that this important department of education may be extended at once, to meet the unexpected demand.

THE EXHIBITION BY THE MANUAL TRAINING DEPARTMENTS OF THE PUBLIC SCHOOLS IN 1888.

The Society offered the Board of Education a sufficient sum to cover the expenses of an exhibition of the Manual Training Departments connected with our Public Schools. In pursuance of this suggestion, the Board held an exposition at Horticultural Hall from Tuesday to Friday, the 8th to the 11th of May [1888]. The notable feature of this exhibit was the presence of classes under instruction. Eager spectators crowded about the drill of the Kindergärten, the little seamstresses using their needles intelligently and skillfully under the verbal direction of a teacher, the Normal School Cooking Class, the Industrial Art Classes, and the busy workshops of the Manual Training School. Eighty thousand visitors passed through the gates from the opening to the close of the exhibition. Classes were kept at work day and evening, and yet there was not a single breach of discipline requiring the intervention of the police. All that army of little workers was easily controlled in these new conditions by the teachers of our Public Schools. The exhibition was visited by many persons from all parts of the country, and its importance was so generally recognized that there were propositions to send the exhibits to California and Australia, at the expense of these States. It was felt, however, that the life of the exhibit was the working classes, not the numerous interesting specimens of work, and it was not thought advisable to exhibit the accomplished work without the educative method.

We feel a just pride in the reflection that we were able to offer to the Board of Education the opportunity of making this important exposition of the great work which they are accomplishing in the schools of Philadelphia.

We do not dwell at length upon what we have achieved during the past year, for we are more nearly concerned with that which remains to be done, and the rest of this report will be devoted to the consideration of the important project we have now in hand.

We have submitted to the Board of Education a project for the establishment of a High School for girls in Applied Household Science.

Such a school should answer a like purpose in the education of girls, as the admirable manual high school, in the training of boys, and should cover similar ground.

It will not do to assume that this ground is generally understood. Professor James states it ably and succinctly in his article in the Andover Review for October, 1888, under the heading of "Manual Training in the Public Schools in its Economic Aspect."

The words of Professor James, as a member of this society, appeals to us with peculiar force, and his membership and sympathy lend weight to our recommendation.

After quoting a few paragraphs from the article by Professor James urging the educational value of Manual Training, the report proceeds to advocate the founding of the proposed High School for Girls.

* * * * * * *

The subject is so new, so technical, and so important, that it is difficult to bring it within the compass of a report.

We will treat of it under two heads: that of organization and that of demand and need.

THE ORGANIZATION OF SUCH A SCHOOL.

It must be educative, must eliminate construction, must cover a sufficient number of the underlying principles of the functions and occupations of women, to make it of general and not special application, must lead to many-sided activities and abut in diversity of employment, must educate the hand and the brain.

What are the functions and occupations of women?

We answer in one sentence: *The family, under the economy of the house.*

Whatever enters into the house; whatever emanates from it. Light, fuel, ventilation, food, material structure, and appointment on the one hand; and on the other that to which all these minister, the entity of the family.

What group of principles underly these high functions and occupations?

The underlying principles of Applied Household Science.

Such a school should have three departments: Letters proper, Science, and Manual Training.

The Department of Letters should, as in the case of the Boys' Manual Training School, be sufficiently advanced and comprehensive to entitle the graduate to enter advanced institutions of learning; and should be, in its historic and practical training, directed towards the evolution and administration of the house.

The Scientific Department should be based upon chemistry, by the experimental, and not by the text-book, method.

The Manual Department should train the eye and the hand in drawing, in modeling, in carpentering, in weaving, staining, dyeing, &c.

At the close of the term there should be the application, in original work, of the principles acquired.

The graduate would thus have designed, woven, dyed, and made a costume, or curtain, or carpet, or sofa, or model for room or house. And now we begin to see how training in these various principles would lead to diversity of employment, and how the girls who have been led by the old method of the schools to become saleswomen, type-writers, and telegraph operators, would be led to seek employment in dyeing, in weaving, for the weaving that is now done is merely a mechanical feeding of the machine, as forewomen, eventually, in factories, as housekeepers, meaning by this term not the women who stand superintending the shaking of carpets, but those who superintend the whole administration of the house. There is no valid reason why women should not be qualified for the positions of housekeepers and caterers in private houses and public hotels.

Here are possibilities and fields of employment not only entirely new to women, but entirely new in any excepting a limited and empyrical sense.

What is this new, unused, dormant, potential force which we are about disengaging, to the infinite and incalculable benefit of mankind?

It is the latent energies of trained and disciplined womanhood.

If we develop these in the direction of the functions and occupations of men, not only do we overcrowd these fields, but we lose all that entirely unused, undetermined force which we call, in the concrete, woman.

There is in the effort to adjust the liberty of women to the new political and social conditions this great possibility of incalculable value; but we must not overlook the correlative fact that there is, in the repugnance which many women feel toward their own emancipation, a wholesome apprehension that they may be remodelled, instead of regenerated. Out of these conflicting extremes, that liberty which means law, that development which means growth, must come, or we shall see our civilization fail in the direction of the overthrow of the family as the unit in the State.

No other agency will be so potent to arrest such a catastrophe; and we speak with some authority as we are, so far as we know, the only body who have been for the past seven years working upon this problem.

If in this matter of the relation of women to the family and the State, we vindicate the eulogium of Matthew Arnold that in "what concerns the solving of the political and social problem we see clear and think straight," we shall not fail, for this is the solution of a problem that is clamoring for an answer.

WHAT ARE THE DEMAND AND THE NEED FOR SUCH A SCHOOL?

First, there is the conscious demand which must necessarially lag far behind the actual need.

There is much of this demand. All over the country a casting about for departments of manual training for women; schools of arts and industries established here and elsewhere; weaving, &c., introduced into the classes of the Pennsylvania Museum of Industrial Art; minor arts, sewing, and cooking connected with the system of public education.

All these are admirable, but it will not do to flatter ourselves with the idea that the introduction here and there of one or more departments in the occupations of women, either in public or private schools, is a solution of the problem. It is no more a solution than the placing in the schoolroom of a bench and tools with instruction in carpentry would have solved the problem of manual training for boys.

Manual training for women is, from two causes, in peculiar danger of falling into this pitfall of construction or training for special industries.

There is no jealous apprehension on the part of women of the overcrowding of their occupations, and, as yet, no educative system in practice answering to the Russian method in the underlying principles of the use of tools. It is this educative system, adapted to the nature of women, that we now propose to the Board. It is between the Scylla of ignorance on the one hand, and the Charybdis of special construction on the other, that we show you a channel where you may pass in safety.

Sewing, cooking, drawing, modelling, are sought with eagerness by the pupils.

When it was proposed to introduce sewing into the Normal Schools the pupils in four classes were asked to indicate their interest by raising the right hand; all but four of those one hundred and sixty hands were raised in eager approval.

When the central Cooking School for Grammar School girls was opened this winter at the Normal School building, there were six hundred applicants in excess of the facilities, and the applications ceased only because of the impossibility of securing admission.

The importance of this question of industrial education has been recognized by the legislature in the bill creating the Industrial Commission, and in the address of the Governor at the recent opening of the present session. The report of the commissioners is awaited with interest. Sufficient is known of their probable recommendations to show that such a school as we propose will be in harmony with the general movement.

We have spoken of the demand; let us show somewhat of the need of such a school.

The decadence of apprenticeship and the paralyzing influence of the machine upon the mechanic, whose whole intellectual energy and hand-skill are employed in one mechanical, often-repeated, unvaried occupation, led men to devise a method of education which should rescue the manhood of the nation from this degradation, and the laborer from his ignominious position as the mere slave of the lamp which science has lighted and capital evoked in this nineteenth century.

The liberal education which was given formerly to women within the home, where they wove, spun, weaved, preserved, baked, sewed, and mended, has also fallen into decadence.

All these diversified occupations have been specialized. The fibre is spun in one factory, woven into textile fabrics in another, cut and made up into garments in a third and, finally, sold by one ignorant woman behind a counter to another as ignorant in front of it.

Yeast is manufactured by a company; bread is baked in a shop and sold to a housekeeper who does not know the difference between dry and fresh yeast, and who supposes fineness and whiteness in flour to be synonymous with sweetness and nutrition.

Unsavory odors greet the fretted mistress upon the threshold of her house, and little does she imagine that a proper understanding of ventilation would remove them altogether, or that a little skill in cooking would convert them into appetizing and delicate aromas.

She has never heard of the five degrees of boiling recognized in France.

She does not know that it is possible to boil a cabbage inoffensively. How should she, when she does even not know that she can increase the temperature of boiling water by the simple addition of salt; and, never having heard of essential oils, how should she know that she has liberated them?

She accepts moths as a scriptural dispensation, and, even if she clearly apprehends that they live upon her woolen fabrics, it has never dawned upon her darkened intelligence that they originate in the imperfectly-cured hair which she has so innocently and confidingly bought of her upholsterer.

It is not too much to say that if a thousand women in Philadelphia knew the cause and understood the prevention of moths, there would not be a single moth in any house in this city.

The same applies to poisonous dyes, imperfect dyeing, split and defective threads, &c., &c.

It will be asked, are you running amuck against modern methods, subdivison of labor, &c.?

Not at all!

If you educate one hundred girls in such a school as we propose we are ready to let the economic question of labor settle itself.

It will then be immaterial whether one of these girls, grown to womanhood, makes all the yeast, and another weaves all the cloth, for each will know all the processes, and will be intelligent in purchasing and skillful in using the articles which enter into her house.

A few women have, no doubt, with difficulty, solved these questions more or less perfectly in their own interests, but their number is too small to be anything but exceptional, and entirely inadequate to making a general impression upon the community.

It is from such women that this project receives the greatest encouragement, for they alone are qualified to understand the importance of the introduction of educative methods in the training of women for the administration of the house.

If the decadence of apprenticeship creates demand for manual training as being essential to the harmonious development of the boy, how much more important is it that mental and manual training should be given to the girl, in view of the deplorable condition of unthrift, clumsiness, dullness, which is falling upon women from the decadence of home training in household economy.

Such training as we propose, while tending to lucrative occupations, so far from disqualifying women for their natural duties, would prepare them, as they have never yet been prepared, for the administration of their own homes.

So far public education in this community leads only to one career for women.

The profession of teaching is one of the highest, and should be one of the liberal, professions, and, moreover, it is no doubt essential to the very life of the schools, but it is not the whole destiny of woman.

The whole system of education for women is practically a feeder of the Normal School; but such a high school in Applied Household Science as we propose would lead to lucrative employments as bookkeepers, designers, housekeepers, caterers, dyers, bakers, upholsterers, decorators, dressmakers, forewomen in factories; and the graduates of the first model school of this character would be, as were the graduates of the first manual training school for boys of the Boston Institute of Technology, in demand all over the country as teachers of the new method.

There is a demand, in view of the overpressure upon women who are the heads of households, in this day of such complex and varied interests, for relief from the supervision of the details of the administration of the house—for trained managers; and the introduction of graduates from such a school as forewomen in factories is probably the only practical means of reaching the factory girls and solving the difficult problem of this dangerous social condition growing up in our midst.

CHARLOTTE PENDLETON,
Corresponding Secretary of the Public Education Association.

A large well-printed pamphlet of 34 pages entitled "Scheme for a Girls' High School," contains the schedule of courses as given in the Boys' High School,—The City Manual Training School,—after which the proposed girls' school is closely modelled.

The pamphlet is printed in Roman type, which is a copy of the schedules of the courses in the City Manual Training School for Boys. Such additions, or changes, as are proposed to be made in the Boys' course, to adapt the school for the needs of girls, are printed in italics. The principal changes are here given.

SCHEME FOR A GIRLS' HIGH SCHOOL.

The principles of the use of tools, underlying the large number of trades and industries entering into the house, may be grouped in such a manner as to bear the same relation to education as the principles of the use of tools, underlying the trades common to men.

Training for women in the principles of applied household science, would have the peculiar advantage of preparing for the occupations which enter into the administration of the house, as well as lead to many lucrative trades bearing upon the construction of the house.

It is impossible to overestimate the importance of selecting principles underlying such trades and occupations which, leading to lucrative employments for women, may not lead away from their important functions as home-makers.

The tools from which we seek, therefore, to extract the underlying principles are those which enter into the construction and administration of the house.

Many of these are the same as the Manual Department connected with the Boys' High School.

We have taken the annual catalogue of this school and modified it in those directions which we consider desirable in connection with manual training of girls.

The matter in roman type *is from the Catalogue of the Manual Training School for Boys.*

Five parallel lines of study are given in the Boys' course of three years. In the first, "Language and Literature." the only change is to substitute "and one modern foreign language" instead of "German." In the fifth course "Tool Instruction," etc., "pottery, carding, spinning, and weaving" are added.

In the detailed courses under Language and Literature the following is added:

Literature should treat of social customs, as in the Canterbury Tales, the Rape of the Lock, John Gilpin, the Old English Ballads, Miles Standish, Hans Breitman, The Commemoration Ode, and the students should be led to search for literary treatment of subjects of which they have acquired a scientific and historical knowledge. For instance: Homer's women, Penelope and her web, the loom, spinning and weaving in pure literature, the grain in Egyptian burials, etc. The essays should treat of the science, art, literature, history or ethics of the house.

In the course under history is added:

The department of history should trace domestic and social customs, and the historical evolution and administration of the house, rather than records of dynasties and campaigns.

In the "Course in Science," the following sentences especially in the sciences underlying the construction and administration of the house and "especially as to food, heat, ventilation, sanitation, hygiene," are added.

Under Chemistry:

Chemistry should be somewhat enlarged, as it is at the basis of so much that enters into the construction and administration of houses.

* * * * * * *

Action of alkalies, acids, etc., upon tins, textile fibres, etc.

* * * * * * *

In place of metallurgy we propose a course in advanced chemistry, that is, in the natural organic processes, such, for instance, as the processes of fermentation in bread, wine and vinegar, in decomposition of milk and similar food products; demonstration of physical condition of impurities found in air and water; use of the microscope, especially to discover the forms of woods, crystals and textile fibres.

We advocate teaching these branches by tracing processes, in the spirit of the new education, rather than by text precept and analysis.

Under Physiology:

We would modify this study so as to throw out theory and dissection, and to make it a truly moral agency by demonstrating effects of heat and impurities introduced into the atmosphere, and by showing the principles underlying the moral laws enacted by church and state at various times, proving that these are not based upon arbitrary edicts, but on some natural scientific conditions; as, for instance, the laws of the Jew governing the eating of pork, the reasonableness of such a law in hot Eastern countries, and the dangers, with remedy, in this country, always showing the underlying principle rather than the dogmatic law.

In the "Course in Drawing," all the introductory paragraphs are here given; the proposed additions to adapt the instruction to the new girls' schools are printed in italics.

FOURTH.—COURSE IN DRAWING.

The importance of Drawing in its application to Manual Training cannot be overestimated. It is, in fact, the first step in manual training. Without drawing, the use of tools becomes a mere mechanical imitation, and has little value as an educational factor. From the conception of the idea to its expression in the concrete material, the drawing is the medium through which the mechanical processes are logically developed, and brought to a definite and practical form.

From the beginning, therefore, the pupil is taught to interpret working drawings, and to reproduce from them the indicated forms. He must understand the language in which they are described, and acquire by education and experience the ability to obey it.

While drawing underlies all industrial work, its application is not limited to mechanical construction. Throughout all the departments, drawing is the common language used in explaining facts, ideas and principles. By means of historical, botanical, and topographical maps, literary and economic charts, geometric diagrams, anatomical and geological sketches, the pupil graphically expresses the lessons taught in the class-room.

Drawing is at least as valuable in the manual training of girls in principles of tools underlying the household handicrafts as in the principles underlying the trades followed by men. We would make this branch more educative, and less imitative than heretofore, seeking always to develop in the direction of the underlying principles of art as well as industry. We would make decorative drawing bear a true relation to such a school by taking the forms revealed by the microscope as the subjects. The girl should draw the underlying forms so revealed in the cereals, textile fibres, crystals, etc., which pass under her hands. By thus incorporating them in their appropriate fabrics she will not fail to have a correct idea of the relation of form, color and texture. For instance, by drawing the underlying forms in flax, silk, cotton and wool, and then weaving these forms magnified into the linen, silk, cotton and woolen products, and by combining with the favorite bird's-egg blue, the texture of the shell, she will produce entirely new and lovely effects.

The principle of reducing large objects for decoration is well understood, but the principle of magnifying underlying forms has never been exploited; and it would have the highest value in leading the mind to perceive that beauty is integral and not superimposed. It would lead to a true canon in art, and correct much of the confusion which distorts modern art and industry. It would be in the highest sense educative.

The Course in Drawing has three general divisions:—

First.—Constructive drawing, as the basis of all industrial pursuits.

Second.—Representative drawing, designed to educate the sense of form and proportion, to teach the eye to observe accurately and to train the hand to delineate rapidly the forms of objects.

Third.—Decorative drawing, used as a means of cultivating the taste, and developing an appreciation and love of the beautiful.

MODELING IN CLAY.

(*Third Year.*)

* * * * * * *

In clay modeling, instead of merely copying the complex forms of highly developed art periods, we would have them originate simple forms, the principles of which they have learned in the history and literature of the first developments of historic races, in vessels for cooking, porous water-coolers, such as were used by the Egyptians, etc. Here again the magnified underlying form could be used in decoration.

In the "Course in Tool Instruction" the following is added :

In place of the tool instruction omitted from the catalogue, we would introduce a bale of cotton, a bag of wool and flax, and a quantity of silk, and pass all these through their several processes. We would also carry construction in wood articles further than in the boys' school, and we would introduce the potter's wheel. We would thus keep the balance of training in mental processes and hand skill.

In the list of "Equipments," under "Mechanical Department, Wood Shop," the following change is suggested:

In place of forge shop we would have 17 *looms, sufficient for classes of* 48 *girls. The use and care of these would teach something of power, engineering, etc., without which no one can go forward to any mechanical employment.*

Under "Foundry:"

Desks for gas fixtures to be connected with the cooking apparatus constructed by the girls.

The pamphlet closes with the following acknowledgment:

We wish to acknowledge here formally the assistance rendered us in the preparation of this scheme by Morris Longstreth, Esq., M. D.; Professor Sayre, Principal of the Boys' Manual Training School; Professors Henderson and Entwisle, of the Manual Training School, and Miss Stewart, the teacher of Kindergärten Methods in the Normal School.

CHARLOTTE PENDLETON,
ALICE LIPPINCOTT,
From the Executive Committee of the Public Education Association.

X.

PUBLIC EDUCATION SOCIETY OF THE CITY OF NEW YORK.

INTRODUCTION.

This Society, which seems modeled after the Philadelphia Association whose history has just been given, is of very recent origin. From the "Memorial" presented by it to the New York City Board of Education, on the 6th day of February, 1889, are taken the following extracts, which must serve to set forth the organization and purposes of this new body which seeks to become an active element in civic life.

While the executive official bodies in charge of the direction of the city schools of the Metropolis, are in no such need of re-organization as were those of Philadelphia when, in 1880, the Public Education Association of that city was formed,—since the office of Superintendent of City Schools, then unknown in Philadelphia, has long existed in New York City,—there is, nevertheless, not only in New York, but in every large city, ample room for such intelligent watchfulness of school management as public-spirited citizens, cooperating with experienced, capable educators, can properly undertake. Such associations, making it their business to furnish to the public accurate information in regard to all matters affecting the interests of the public schools, serve to create an enlightened public opinion which will sustain the educational officials in their efforts to develop and improve the schools of the people. So large and diverse are the numerous legitimate expenditures of a great city, and so onerous is the burden of taxes, that each interest is forced to struggle to obtain its due proportion of the public monies. So many are the demands whose claims are obvious and irresistible,—such as provision for the care of the sewers, the streets, the docks, the public buildings and the parks, and for the pay of firemen and police, that the cry of little children for the bread of knowledge is hardly heard amid the clamor of strong men earnestly contending for their special needs.

The schools are always the first to suffer if retrenchment is the order of the day. On the pretext of the necessity of economy, the salaries of the teachers are relentlessly cut down, the building of new school houses is at once stopped, and so the expenditures of the city are lessened, just exactly where they should be increased; for, in every growing town, the needs of expenditure for the schools, are always growing; both because the number of school children is increasing, and because the progress of the world is so rapid, that new studies and new methods of training the pupils to meet the changing conditions, are continually and imperatively demanded. The teaching of drawing, the movement for manual training, the introduction of public kindergarten, each and all of which are changes and additions to the educational forces of the community, and each of which increases the first cost of the schools, are yet, in the judgment of those who have given most attention to educational needs, urgently demanded.

If this statement of the situation is correct, it is evident that there is ample room for the activity of such a Public Education Society in every city; that is, in the rush of private enterprise and in the press of demands of the various public needs, there is a necessity for the combination of public-spirited citizens to care for the needs of the schools, whose relation to the financial interests of individuals and communities is not so immediately obvious, though by no means is it less essential. The needs of such public interest in the schools, which arise from the internal management of the schools, and relate to the discipline, methods of instruction, examinations, etc., are sufficiently set forth in the memorial itself. The Memorial of the New York Society begins as follows:

To the Board of Education of the City of New York:

The Public Education Society of the City of New York, organized to "inform the public mind in regard to the current systems of education, and to suggest such improvements therein as may from time to time appear expedient," respectfully presents the following facts and suggestions for your official consideration.

The Public Education Society believes that the present public school system of the City of New York is defective, (1) in respect to accommodations provided; (2) in respect to courses and methods of instruction; (3) in respect to administration. In support of this belief, we would submit the following statement:

Several pages follow of carefully compiled statistics under the first head—"In respect to accommodations provided;"—showing the school population, number and distribution of the teaching force, etc., and the number of school sittings afforded by the city.

From this the final paragraph is taken.—

Under the head of deficient accommodations, we are of opinion that the subject of play-grounds for the pupils, or the lack of them, should receive your attention. For the preservation of health and for the necessary relief from the confinement of the school-room, some place should be provided in connection with every school building where the children may freely take exercise in the open air. If the value of real estate in the city is so great that purchases of ground adjoining the school-houses cannot be made for this purpose, we call your attention to the fact, that in London, similar conditions prevail; and there, the problem has been successfully and satisfactorily solved by placing play-grounds upon the roofs of the school buildings.

Under the second topic, matters germane to this Report are discussed, as follows:

As to Courses and Methods of Instruction: A comparison of the course of study pursued in the New York City Schools, with those in use in the elementary schools in France, Prussia, Baden and other European countries, makes it plain that in this city less progress is made in the various branches of knowledge by pupils of the same age than in foreign countries; and this is so, despite the fact that the school children here, are hard-worked and the school curriculum overcrowded. In the foreign countries just referred to, reading, spelling, and composition writing are better and more effectually taught than with us; geometry (*Raumlehre*), in so far as it involves the study of simple and familiar space-relations, is taught very early and with excellent results; universal history, illustrated by biographical sketches, follows the study of the history of the mother-country, and in outline at least, is taught to children of the same age as those in our grammar schools; geography is far better and more practically taught than here, unless we make an exception in favor of certain individual teachers who have adopted the newer methods; natural science is taught systematically and with continual reference to observation and experiment; drawing is far better than here, and is treated as a most important and not as a subsidiary subject of instruction; and, finally, vocal music and physical training are looked upon as important factors in the child's education, and not as non-essentials to be provided for if possible, after everything else has been considered.

The point is then made, that in New York City some sixty thousand school children leave the schools before they reach the age of twelve years, and, in the light of this fact, the arrangement of studies which only looks to continuous progression through all the school grades, is criticised as follows :

Some of the evils of the methods now in use are these (*a*) The arbitrary rule of the manual leaves no room for original work, but deprives principal and teachers of discretionary power, and enforces needless uniformity. The manual might be useful with others of its kind if taken as a suggestion, but it is now used as the one absolute authority for the education of more than 150,000 children, and has been so used for many years with very few changes for the better. Great advance has been made in educational methods during this period, but little or none of this advance has found its way into the manual in use in this city.

THE SACRIFICE OF EDUCATION TO EXAMINATION.

(*b*) The character and kind of tests imposed upon pupils and teachers as a means of ascertaining the success of class-room work, are bad. In this connection, we would call your attention to the protest against the sacrifice of education to examination, which is printed in the *Nineteenth Century Review* for November 1888, and signed by several hundred of the leading educators and thinking men and women of Great Britain. The objections which they urge against the use of examinations as an end instead of a means, apply with the greatest force to the condition of affairs in New York City. The annual examinations by the Assistant Superintendents, are merely memory exercises upon the part of the pupils, and are marked as such ; they have no reference to the general growth of the pupil's mind from year to year, nor to their increasing powers of observation and reasoning.

THESE EVILS ILLUSTRATED.

The standard of perfection set in these examinations, is often reached but always at great cost to the pupil, since it means almost endless drill and cram. This evil is greatest in the primary grades. Children of five and six years of age are subjected to an examination in thirteen subjects and marked upon them, when many of the little ones have not been in school three months. It is true, that these thirteen subjects may easily be grouped under three or four heads, but they are not so taught, nor are the examinations so held. The persistent and inhuman cramming required to bring seventy or eighty such young children up to a high class average in all these subjects, crowds out the possibility of rational teaching from the first hour of the day to the last. In a class of 75, hesitation on the part of 12, puts the teacher in the second rank. In a class of 50, seven or eight failures will have this result. On this marking depends the teacher's rank and chances for future promotion, and from these markings there is no appeal. It is made an object to the teacher, both financially and otherwise, to overcrowd her class room. In the grammar school, the same end is kept in view and the same means are employed to reach it. The nervous strain on the pupil is the greatest in the highest grades, as here, there are two sets of examinations which must be crammed for. First, the Superintendent's test, and then the examinations for the Normal and City Colleges. The questions given at these last examinations may not be difficult ; they may fall far within the limits of the candidate's knowledge, but this does not lessen the evil of allowing and encouraging thousands of children to enter into competition for the few hundred vacancies, thus putting a premium upon cramming for admission to a higher institution. This, of itself, destroys the independent life of the schools and effectually cripples them.

The features of administration are then discussed at some length and the suggestion is made, that an additional "Council of Educational Experts" could wisely be associated with the City Board of Education. In conclusion, the committee appointed to prepare this Memorial sum up as follows :

We have thus, in outline, given a statement of the facts on which our opinion concerning the deficiency of the school system is based. We earnestly recommend that they be investigated, and steps taken to improve the efficiency of the schools in the direction indicated. We are of opinion that this investigation can be best undertaken by a Special Commission appointed for the purpose, which Commission should include some members of recognized reputation and authority in matters of education. The recommendations of such a Commission, made after thorough and impartial investigation, will afford the Board of Education a most excellent and most satisfactory basis of action. For the constitution of such a Commission, legislative authority may be necessary; but we believe that the public interests demand, and that public opinion will commend such steps.

Should this suggestion meet with the approval of your Honorable body, the Public Education Society will be pleased to appoint a committee to co-operate with a committee of the Board of Education in drafting a bill to be submitted to the Legislature now in session, providing for the appointment of a Commission to investigate the operations of the school-law in this city, to revise and codify the same, and to recommend improvements in the school system.

All of which is respectfully submitted on behalf of the Public Education Society.

February 6, 1889.

NICHOLAS MURRAY BUTLER
HENRY Y. SATTERLEE
JOHN B. PINE
KATE V. THOMPSON
Committee.

The fact that Dr. Butler, the energetic President of the "New York College for the Training of Teachers," is chairman of the committee presenting this statement, is conclusive evidence that the interests of Manual Training and of Drawing will not be neglected by this new society.

PUBLIC EDUCATION SOCIETY
OF THE
CITY OF NEW YORK.

[Organized, June, 1888.]

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Professor J. S. NEWBERRY.

Vice-Presidents
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APPENDIX N.

PAPERS

RELATING TO VARIOUS PHASES OF

INDUSTRIAL EDUCATION IN ENGLAND

AS SET FORTH BY

SOME LEADING ENGLISH EDUCATORS AND EDUCATIONAL OFFICIALS.

I. Introduction.
II. Liverpool Council of Education—Prize Distribution to Elementary Schools. (1886.)
  (*a*) Opening address by the Mayor of Liverpool.
  (*b*) Conditions of scholarships announced by the Secretary.
  (*c*) Address on "Technical Education" by Professor Sir. Henry Roscoe.
  (*d*) Brief concluding remarks by local authorities.
III. Extract from Inaugural Address of Professor Hele-Shaw, University College, Liverpool. (1887.)
IV. Prize Distribution in Sheffield, England. (January, 1888.) Two Addresses by Educational Officials.
  (*a*) Address by Mr. Mundella at the Technical School.
  (*b*) Concluding remarks by local authorities.
  (*c*) Address by Sir. W. Hart-Dyke.
V. Technical Education in Board Schools by Rosamond Davenport-Hill. Contemporary Review, May, 1888.
VI. How to gain time for Industrial Studies.—Practical Suggestions by an English Educator. (1887.)
VII. Inaugural Address and Discussion on the occasion of the opening of a new hall in the College of Preceptors, London, England (April 1887.)
  (*a*) Preliminary words.
  (*b*) Extracts from report of proceedings and from the Address by J. G. Fitch, LL. D., on "Socrates and his Method of Teaching."
  (*c*) Discussion of the Paper.
VIII. "Educational Freedom," extracts from a notable historical address by Dr. Wormell, M. A., before the London College of Preceptors. (June 1887.)
IX. A Conference on Technical Instruction, held in London by Educators and practical artisans. (1887.)
  (*a*) Preliminary words.
  (*b*) "The present position of the Technical Instruction Question." A paper read by Professor Silvanus P. Thompson, President of the Finsbury Technical College.
  (*c*) The discussion of the paper.

X. A notable discussion concerning Technical Education held in the pages of "The Nineteenth Century" during the year 1888.
  - (*a*) "The Vague Cry for Technical Education," by Lord Armstrong, July 1888.
  - (*b*) "Lord Armstrong and Technical Education," by Sir Lyon Playfair, M. P., September 1888.
  - (*c*) "The Cry for Useless Knowledge," by Lord Armstrong, November 1888.
  - (*d*) "The Sacrifice of Education to Examination." A strong protest by Professor Max Muller, Edward Freeman, Frederic Harrison, and a long array of the authors, educators, and statesmen of Great Britain. "The Nineteenth Century," November 1888.

I.

INTRODUCTION.

The papers comprised in this Appendix illustrate the attitude of a number of distinguished educational authorities in Great Britain towards the various phases of Industrial and Technical Education which are considered in this volume.

It is noticeable that a similar confusion in the use of terms, when referring to the different phases of this new educational movement, is as prevalent among English educators as it is in the discussions among American educators, reference to which will be found on page 68 of this volume.

In the opening paper,—a report of the proceedings at Liverpool on the occasion of the distribution of prizes to the pupils of Elementary Schools, and of the address of Professor Sir Henry Roscoe on "Technical Education,"—it appears that the speaker, in using that adjective "Technical," clearly means to indicate such simple elementary training in industries as is given to pupils in schools of a class similar to our common schools of primary, intermediate, and grammar grades; whereas, by the term "Technical Education," as used in this country, the training given in the Institutions of Technology,—the professional training of Mechanical, Mining and Civil Engineers,—is commonly understood; though the term "Technical *Training*," is also used to designate definite instruction in a particular trade or industry.

In the brief extract from the inaugural address by Professor Hele-Shaw, also delivered in Liverpool, the definition of this term is directly considered. The extracts which follow, from the two addresses delivered in Sheffield on similar occasions, treat also of the proper meaning to be given to the term "technical."—The names of Mr. Mundella, the well-known English statesman, whose interest in educational matters is known the world over, and of Sir. W. Hart-Dyke, Vice President of the Committee of Council of Education, are a guarantee that their words on these matters are worthy of most serious attention.—These gentlemen evidently referred to a feature in this new form of education analogous to that which characterizes the American Manual Training School, with reference always to the further definitive training in special trades; to which the excellence of the Swiss, and other European artisans, was attributed. The article from the "Contemporary Review," giving an account of what is being done in beginning industrial education in the London Board Schools, commences with a frank statement of the two meanings which attach to the term "technical education," and clearly indicates which definition is followed in this article.

In connection with such admitted confusion in the use of terms, the transition to a consideration of the methods of Socrates as a teacher, can hardly be considered as abrupt; and the extracts from the admirable paper read by Dr. Fitch, on the occasion of the opening of the New Hall in the College of Preceptors, will be found not only most interesting, but to have a direct bearing on the discussion which the movement in regard to manual training has called forth.

The extract which follows from the eloquent address by Dr. Wormell, is both suggestive and inspiriting, in its view of the promise and reward of the true teacher, while it has an encouraging word for the advocates of elementary industrial education, and a word of warning against a danger to which all public schools are especially exposed.

The paper which follows is most interesting as giving the views and expressions of practical workers in the industrial arts, which were drawn out during the discussion upon Professor Thompson's paper; while that paper itself is very valuable for the succinct view it presents of the recent activity in London in providing facilities for the definite technical training of artisans.

The extracts from the papers contributed to the Nineteenth Century by such distinguished authorities as are Lord Armstrong and Sir Lyon Playfair, M. P., during the year 1888, will be found of great interest to all who are considering the needs and demands of modern education; while the brief excerpts from the astonishing protest against the abuses of examinations, which have grown up by reason of the adoption by the English Government, some forty years ago, of this plan of entrance into Government service, are commended to the careful consideration of all thoughtful citizens throughout the United States.

II.

LIVERPOOL COUNCIL OF EDUCATION.

PROFESSOR ROSCOE ON TECHNICAL EDUCATION.

INTRODUCTION.

The following extracts from the report given in the Liverpool Post of January 30th, 1886, are here inserted, as showing what has been done in the elementary schools in that city, which seem to closely correspond to the lower school grades of the public schools of American cities.

The account of the proceedings illustrates the English custom of payment to teachers "by results," and of stimulating the pupils by the public award of medals, prizes and scholarships. Professor Sir. Henry E. Roscoe, M. P., who presented the prizes and delivered the address, is, I believe, the grandson of that once famous merchant prince of Liverpool, who is known to the world as the brilliant biographer of the illustrious Merchant Prince of Florence, Lorenzo De Medici, and as the author of other famous historical works, which form the chief claim to literary distinction that can be advanced for the commercial city of Liverpool. Professor Roscoe himself, has long been identified with the cause of Education, and more particularly with scientific and Technical Education; having been a member of "The Royal Commission to enquire into Technical Instruction," whose Second Report, issued in 1884, is such a storehouse of information concerning the contemporary efforts made to promote Technical Training throughout the civilized world. It will be observed that in this address, the distinguished Professor uses the term "Technical Education"—which, in this country, is reserved as defining the courses of the higher institutions of Scientific Instruction,—in connection with the elementary schools. He does not, however, wish to ignore the higher schools, far from it; but on this occasion argues the need of laying the foundation of higher scientific and technical education in the primary schools; thus, in this address occupying the same ground and arguing from the same premises as do the American promoters of some forms of industrial education in our own public schools of all grades.

Incidentally, he shows how little progress had, at that time, been made in the introduction of any form of industrial education in English primary schools,—Manchester, and Sheffield, being the only places in which these studies had been attempted.

In Sheffield, something corresponding to our "Manual Training Schools" proper, seems to be on trial and meets, it is noted, with success.

The "Council of Education" seems to be a voluntary association of citizens who in their efforts for education co-operate with the city educational authorities,—a unique instance in England of such co-operation, as Professor Roscoe states, but, in some of its features, not uncommon in the United States; as there has been frequent occasion to state in this Report.

The extract which follows from another address also delivered in Liverpool, the recent Inaugural address by Professor Hele-Shaw, of the University College, Liverpool, is given for its discussion of the meaning of the term "Technical Education," which is also discussed by Professor Roscoe. These two extracts are here inserted in connection with the statements previously made in Chapters VII and VIII of this Volume (see pages 55–69 Art and Industry Report, Part II), as to the desirability of a clear definition of the several terms used to designate the various and distinct forms and stages comprehended under the general term of "Industrial Education." It will be seen that while Professor Hele-Shaw gives to the term "Technical" a very general meaning; he yet points out that Manual Training, and its preparatory studies, are not "Technical" at all. It was in view of this fact, that the author of this Report sought, in the chapters just indicated, to define and limit the terms characterizing the several phases of this Modern Educational Movement.

PRIZE DISTRIBUTION.

The distribution of scholarships and rewards presented by the Liverpool Council of Education to the children attending the various elementary schools in the city took place, yesterday afternoon, in the Small Concert-room, St. George's Hall, which was well filled. His Worship the Mayor (Alderman D. Radcliffe) occupied the chair, and supporting him, besides Professor Sir Henry E. Roscoe, M. P., were the Bishop of Liverpool (Dr. Ryle), the Ven. Archdeacon Bardsley, Chancellor Espin, Canons Lefroy and Rycroft, the Revs. J. W. Diggle (hon. secretary), with a large number of other leading citizens.

(a) *ADDRESS BY THE MAYOR OF LIVERPOOL:*

The Mayor, in opening the proceedings, said he had the pleasure to preside at the Town Hall over the annual meeting of the Liverpool Council of Education, when the eleventh report was presented. It was now his privilege to take the chair at this annual distribution of their scholarships and prizes [applause]. The object and work of their educational council and their success were now so well known that he need not detain them by doing more than thus briefly referring to them. He might, however, mention that he had been gratified to observe that the council, in the concluding paragraph of their report, attributed the large measure of general success which had unquestionably of late years attended the progress of elementary education in Liverpool chiefly to the sympathy and zealous co-operation which had existed between the Council of Education and the School Board [applause]. In the best interests of their great and united educational work that meeting would, he was sure, heartily join with him in the hope that friendly relations between these two important bodies might be long and cordially maintained [applause]. For the distribution of their scholarships the council had always happily succeeded in securing the valuable services of some distinguished stranger. Last year the Archbishop of York kindly and ably fulfilled this duty. In the previous year, as they all sadly remembered, an able and interesting address was delivered and the prizes were distributed by the late lamented Duke of Albany [hear, hear].

THE MAYOR ANNOUNCES THE ORATOR OF THE DAY.

That day the Council of Education and the City of Liverpool were honoured by the presence of Professor Sir Henry E. Roscoe, M. P., of Owens College, Manchester, who had the honour to serve upon the Royal Commission on technical instruction, and who was in many ways eminently fitted to fulfil the duty which he had that day so kindly undertaken [applause]. He could not sit down without adding one word about a subject which the name of the late Duke of Albany always brought to his mind—he meant technical education. The subject was one in which his Royal Highness took a deep interest, and it was one with which they in Liverpool hoped to connect his lamented memory still more intimately by the foundation here out of the surplus funds of this year's exhibition of a Leopold School of Technical Education [applause]. He felt sure that both because of the immediate good it would do in educating the people by familiarizing them with the best work in every kind, and because of its ultimate object in the foundation of the school to which he had referred, the exhibition must have their hearty and cordial support [applause].

(b) *CONDITIONS OF THE SCHOLARSHIPS ANNOUNCED BY THE SECRETARY.*

The Rev. John W. Diggle, M. A., honorary secretary of the council, then read the report, and explained that the scholarships were both for girls and boys, and connected the public elementary schools with the schools of the Liverpool College and Liverpool Institute. They were open to competition by each of the eighty-seven schools in union with the council. Fifteen scholarships, the total number being forty-five, were awarded in each year. Each conferred free education for three years, together with an annual grant of £12 in aid of the scholar's clothing and maintenance. Of the fifteen scholarships four were open to competition by girls and seven by boys, of superior industry, intelligence, and attainments; two alike to girls and boys, for special attainments in history and geography; and two, specially to boys, for knowledge and aptitude in elementary science, mathematics, and drawing. The success achieved by many of the scholars in the higher schools, and in the Oxford and Cambridge Local Examinations, was the best evidence of the care which had been given to their instruction. Two of the scholars, after successful careers at Oxford, had taken degrees in honours. A third was pursuing his studies at Cambridge; and a fourth had gained a sizarship at that University, where he entered into residence in October. A fifth scholar had greatly distinguished himself at the University of Edinburgh; a sixth being now a promising student at the Aberystwith University. Two others had recently gained scholarships at Liverpool University College, and would proceed to a degree either of the London or Victoria University. Aided by pecuniary grants from the council, some scholars had become pupil teachers in the public elementary schools of Liverpool, most of them, after the completion of their apprenticeship, having taken high places in the Queen's Scholarship examinations. The reports from the principals of the higher schools continued to be in the highest degree satisfactory and encouraging. The examination for the general scholarships was again conducted by the Rev. T. A. Stevens, M. A., of Magdalene College, Cambridge; and that for the elementary science scholarships by Dr. O. J. Lodge, professor of physics in Liverpool University College, who reported most satisfactorily upon the work done by the candidates. Following the scholarships and prizes, the rewards for regular and punctual attendance would be given. A certificate of merit, the lowest of these was awarded in every case in which 410 attendances had been made within the year. A white medal, the next and higher reward, given to every holder of a certificate of merit, who in a second year should have made the like number of attendances. The third reward, a bronze medal, was given to all who, having already gained the second reward, a white medal, should not have been absent from attendance in the current year more than five times. The gilt medal, the fourth reward, was gained by the same high standard of attendance by those who already possessed the bronze medal. The final, and highest reward was an ornamental parchment certificate, conferred upon those who, having gained the previously named should in any future year maintain this highest standard of regularity. The aggregate number of good attendance rewards gained during the past year by the board and voluntary schools was: Certificates of merit, 7,552; white medals, 4,053; bronze medals, 1,150; gilt medals, 660; and ornamental parchment certificates, 347; making together a total of 13,762. The individual certificates and medals gained in each chool would be sent to the managers to be distributed at such time and in such manner as in their judgment might best promote a spirit of emulation among the children, and give the greatest pleasure to their parents and friends.

(c) *ADDRESS BY SIR HENRY ROSCOE: "TECHNICAL EDUCATION."*

Professor Sir Henry Roscoe, who, on rising, was received with loud applause, said:

Mr. Mayor, Mr. President, Ladies and Gentlemen,—When your president was kind enough to ask me to come down to Liverpool this day to distribute the prizes, and address to you a few remarks on the subject of the work of the Council of Education, I felt that nothing short of absolute duty elsewhere should prevent me from accepting the very kind and flattering invitation. I felt it. sir, a great honour to be asked to follow in the steps of the distinguished men who have during the last ten or eleven years performed the task which I now have the pleasure of fulfilling [applause]. I think, sir, that we may congratulate ourselves, and that Liverpool especially may congratulate itself, on the most satisfactory work which has been done during the past year by this association. I look upon this association as one of the very greatest importance, especially at the present moment. I believe, in the first place, I am right in saying that this is, a unique association—that there is nothing like it in any of the other towns of our country or elsewhere. Its aims, as you are all aware, are, in the first place, the combining together—and this, I take it, is most important—in work for a special and particular object of the board school and the voluntary school association [hear, hear]. At the present moment, when the question of the mode of working the great Education Act of 1870, with which the name of Mr. W. E. Forster will be always connected, is under consideration, it is, I think, of special importance that the work which is being done in this great city by your association should be brought forward in the forefront before the Royal Commission which has just been appointed, and I may congratulate you on having a representative on that commission worthy of the importance of the city [applause]. But, sir, this is not the only object you have successfully attained; we also know that you have a second object equally important, and that is your endeavour—and a successful one—to raise the standard of education in both the board schools and the voluntary schools [hear, hear]. The result of your endeavours to obtain a more satisfactory attendance in all elementary schools of this city—and that a more satisfactory attendance is achieved by compulsion—is shown by the numbers of school attendances given in the report of 1871—the first year of the association—and also in the last report of 1884 [applause]. The first year's report shows 72 per cent. of attendances made by the children on the rolls, and in the latter year it is seen that the number has increased to what I may call the satisfactory one of 82 per cent. [applause]. Let us not, however, now hold our hands, or imagine, because the numbers have risen to the figures I have just mentioned, that we have succeeded in our efforts altogether [applause].

SCHOOL ATTENDANCE IN CONTINENTAL COUNTRIES.

In the evidence which we obtained in the commission to which you, Mr. Mayor, have alluded, we had the pleasure and satisfaction of visiting a large number of different countries, and we found that in most of these the school attendance is much higher even than the number I have given, and that the total number of children in attendance is larger on the number of children of school age. Thus, for example, in Switzerland no less than 97½ per cent. of all children of school age attend a public school [applause]; and I may add that there are practically no absentees at all.

PROFESSOR ROSCOE COMMENDS THE PRIZE SYSTEM OF THE COUNCIL.

The method by which the association accomplishes this most desirable object has already been referred to in the report of your secretary. I should wish, however, to mention the method, as it seems to me one deserving of attention by other great educational authorities. Now, in the first place, there are five grade of certificates given by your council—first, for voluntary schools, and by the School Board, on the same system, to the board schools. And the report which your president has been good enough to send me gives a very satisfactory account of the result of these awards. It is very gratifying to learn that even these very highest awards—the highest step in the ladder—the ornamental parchment certificates, are now increasing in number. In the last year the total number obtained was 292, of which 105 were awarded by the School Board and 187 by the council. In 1884 the total number of youths awarded certificates of merit for good attendance amounted in the aggregate to 8,298 [applause]. Now, Mr. Mayor, it seems to me this is a most useful and a most successful portion of the work of the association, but it is by no means the only part, and I would next be allowed to call your attention to the scholarships which are awarded by the council for the purpose of connecting the public elementary schools with the secondary schools existing in your midst. Well, sir, this is really of the very highest and very greatest importance. What we want now is a general method of connecting these two great departments [hear, hear]. What we require, in my opinion, is a national system by which the young Faradays and young Herschels of the class which are not born to affluence,—the boys, I mean, who show real talent—shall be picked out not only for their own good but for the good of the nation [hear, hear]. And let us trust that the Parliament which is now about to begin its labours anew may not pass away without some step being taken not only to connect the elementary with the secondary schools but to give a system of secondary instruction to the country which is at the present time non-existent. Our secondary schools are excellent, but they require systematization. They require to be brought into connection with our elementary system, and the higher system of university education of the country [hear, hear].

The speaker here referred at some length to the prizes awarded. He then dwelt upon the necessity of having trained teachers, if it was desirable to introduce a new study successfully, and commended the Council for the opening, in 1883, of a "Pupil Teachers College;" which step has been most successful.

SCHOOLS OF COOKERY.

I should like to express my satisfaction on one point, and that is on the instruction of practical cookery. This is a matter for the girls, and especially of the lower classes, of the very highest importance, and the Education Department now give a grant of 4*s.* to every girl in a public elementary school who, having been previously presented for examination in reading, writing, and arithmetic, shall have attended cookery classes not less than forty hours during the year; and here the report is most satisfactory. The value of instruction in cookery has been great. No less than 500 girls have passed the examinations and have received grants during last year for this most important branch of female education. Again the council express a feeling with which I must entirely agree—the hope that increased efforts will be made as far as possible for the elder girls of elementary schools to receive this instruction, as great domestic and social benefit cannot fail to result from this branch of practical knowledge and learning. * * * .

THE WORTH AND NECESSITY OF TECHNICAL TRAINING.

Well, sir, next comes a subject to which I have, as you have stated, Mr. Mayor, given some attention—the subject of technical education. I would like to read the words of a paragraph in your report which, are as follows: "While attention is centred on the primary education, it should be borne in mind that the industrial future of this country and of the colonies depends upon the judicious technical instruction of the people." I don't think more pregnant words on the subject have ever been written, and they may serve as a text to hang a few remarks upon. In the first place, I should wish to congratulate the city of Liverpool on the probable forthcoming—or I should say the certain forthcoming—foundation of a technical school to which you, Mr. Mayor, have alluded. * * * * .

MEANING OF THE TERM TECHNICAL INSTRUCTION.

In the first place, what do we mean by technical instruction? Perhaps it is as well to say what we don't mean. We don't mean teaching trades. We don't attempt to teach special trades such as shoemaking or tailoring. That is not what is wanted in our elementary schools. What we want in these schools is instruction in the principles of natural science, the principles of freehand and mechanical drawing, and instruction in the principles of hand labor—working in wood and iron—and in the use of tools. If in our elementary schools we restrict ourselves to these three principles, we shall do a very great deal towards building up from the bottom a foundation and a system of technical instruction which will be of the highest importance. Don't misunderstand me and imagine that I think these principles will be sufficient all over the country. We must have technical schools of the highest class, and they must be connected with the university instruction which is springing up in our midst. But I will confine my attention this afternoon to the teaching of this matter in primary schools. Now, sir, it is all very well to teach children to read and write and to cipher—that is necessary beginning—but in the present day we need something else, something more; we need that the instruction in the boards schools shall be of a more practical character. We must remember that we are sending out from England every year thousands of young men and young women to the colonies to do a totally different kind of work to that to which they have been accustomed at home, and it is absolutely necessary, in order that their lives may be made happy, and that they shall be useful, that they shall have a training which will enable them to supply themselves and make themselves useful in any circumstances under which they may come.

IMPORTANCE OF TEACHING ELEMENTARY DRAWING.

We ought to teach them the principles of science, of drawing, and the use of tools. Object lessons ought also to be given, and I think that the principles of agriculture ought to be explained. We are too apt, I think, living in large centres of population, to forget that the greatest of all the industries of the country is agriculture, and we are perhaps not anxious enough to see that the scientific principles of agriculture are brought home to our rural populations. So important did the Royal Commission, of which I was a member, deem these practical subjects in our school curriculum, that in their report they referred especially to these matters, and in the recommendation which they made to her Majesty they suggested that elementary drawing be incorporated with writing as a single elementary subject, and that instruction in rudimentary drawing be continued throughout all the standards. It is a fact, of which I think few are aware, that at the present moment in fewer than one-fourth of the elementary schools of England drawing is taught, or, in other words, that in three-fourths of the schools of this country drawing is not taught at all, and even in those schools in which it is taught, it is taught in a very perfunctory manner, and the time and attention given to it is not by any means sufficient, whereas the time spent in writing is very considerable. We have it on very good authority that, if a portion of the time occupied in teaching writing were devoted to the teaching of drawing, the handwriting of the children would not only not suffer, but would probably be improved, [applause]. I am glad to think that some steps have already been taken by the Education Department in this direction; but I am afraid it will take some little time before we find our schools at all on a par with the schools on the Continent in respect to drawing. I think we must all admit that the importance of this question of drawing to every branch of handicraft can hardly be overrated; yet very few of even intelligent artisans—joiners, carpenters, or stone masons—can put pencil to paper and make a sketch or understand what a plan is.

IMPORTANCE OF ELEMENTARY TEACHING OF SCIENCE.

Well, the next question is the introduction of the principles of natural science. We believe that science governs the principles of this century, and that we distinguish our century from others by the spread of the knowledge of nature, [applause]. This would be seen from the changes which have taken place from the beginning of the century until the present time—changes due to the great principles of the laws of nature. And yet in most of our schools the children are taught the seven, I think, rivers of the Punjaub, and if they are not able to tell these they are not allowed to pass their simple examinations [laughter]. But they are never asked questions about the atmosphere, or the burning of a candle, or the earth's composition—questions of natural science. Their minds are vacant on these subjects, and that has happened, perhaps, because many of the schoolmasters or the school inspectors do not know much about it themselves [laughter]. Liverpool, Birmingham, and Manchester, had now taken a lead in this matter and other towns would no doubt now follow. In Liverpool you have an admirable system of scientific instruction. I have listened with great pleasure to the instruction given in these matters, and the answers given by the children [applause]. Now, if the technical schools were introduced, and the boys who distinguished themselves in the elementary science schools were drafted into them, you will be on the high road to do a great good to the community at large [applause]. What now were the recommendations of the commission? Here we have to face another difficulty, because we come on the question of the introduction of new subjects—which was almost impossible. We are constantly hearing so much about pressure that it is a matter of difficulty to know how the subject of elementary science could be introduced, You have succeeded in Liverpool though, and why not in other towns [applause]? To overcome that difficulty the commission have made principles, that only two class subjects be introduced instead of three in the lower division of elementary schools, and that these shall include the subject of geography. This is now one of the selected or class subjects. Our object was to include geography as a science. Geography is the science of the earth—not political geography so much as physical geography—and we desire to include in that class all the principles of elementary science in every department.

MANUAL TRAINING LESSONS IN SHEFFIELD AND MANCHESTER.

Next comes the question of proficiency in the use of tools. The recommendation made by the commission is the following:—"That proficiency in the use of tools for working in wood and iron be paid for as a specific subject; arrangement being made for the work being done, so far as practicable out of school hours [hear, hear], and that special grants be made also in aid of schools for the collection of objects,—costs, etc.—suitable for school museums." I should like to say a word or two on the subject of proficiency in the use of tools and working in wood and iron. At the present time I think that the only cases in which this recommendation has to some extent been carried out are in the schools of Sheffield and Manchester. In Manchester, in two of the ordinary elementary schools—one, I think, a six penny school and the other one of a lower class—instruction in the use of tools is now given after hours. The boys take it up most heartily. They enjoy the work [hear, hear]; and the experiment, so far as it has gone, has proved a great success [applause]. It has not, however, been carried out fully yet, and I trust the Manchester School Board will see their way to increase this most important part of a child's instruction [hear, hear]. In Sheffield this question has been tackled in a rather different manner, for there the boys in their Central School—that is to say, the higher board school, where the boys passing the higher standard continue at school—have a very complete system of instruction in manual exercise in the use of tools. There the drawing is made first, and the actual work which is carried out afterwards is really very remarkable, and shows that the boys not only appreciate the work, but that they can do it with an accuracy which certainly is most commendable [hear, hear]. But, in order to encourage the spread of these manual exercises in schools, something requires to be done, because it is quite impossible to expect that school managers or that the School Board will take up the subject unless they are likely to get something for it, and therefore it seems to me most important that grants should be made for manual work [hear, hear]. There is no reason at all why grants should not be made, for) as your president is already aware, grants are made for girls' sewing, and I do not see why boys should stand at a disadvantage against the girls [hear, hear].

IMPORTANCE OF MANUAL TRAINING RECOGNIZED ON THE CONTINENT.

And this is a matter which has long been acknowledged to be one of importance in the schools on the Continent. There we find a great many schools in which manual work is part and parcel of the school system, and I trust and hope this may before long become part and parcel of our own primary school instruction in this country. I find in your report that our esteemed friend, Mr. Samuel Smith, whom, I am sure, we will all, of whatever political opinion we may belong, regret was not again returned by this city [applause], brought forward this subject, which as you know he has so much at heart, before the House of Commons during the last session of Parliament in a proposal to establish a scheme of industrial training for the destitute classes, to enable them to earn their living, either at home or in the colonies [applause]. It was brought before the House of Commons by Mr. Smith, but he did not press his motion to a division—still there was by no means an unfavorable discussion on the subject. As Mr. Smith is not now able to carry this out, it will give me the greatest possible pleasure to carry it out myself [applause]. But I should like to strike out of Mr. Smith's motion, before it comes before Parliament, the words "destitute classes," for I don't see why the children in our elementary schools might not, with advantage, receive instruction in industrial training in the principles of handicraft work, so as to enable the children who have capacity for it to take up a particular work. In England the people are much too fond of thinking that the real use of education is to fit them to wear a black coat and go into an office [applause]. What we want to do is to show the people the true dignity of labor [applause]—that it is by the labor of our men's hands that we have accomplished what we have done, and by that that England has attained to her position. It was by the cunning hand of the English workmen that this great position has been taken, and that is the direction in which we ought to look with confidence for the future of the country [applause].

The Bishop of Liverpool here took the chair, which was vacated by the Mayor, who had to leave the meeting in order to fulfil other duties.

Professor Sir Henry Roscoe then distributed the scholarships and prizes to the successful candidates, after which

(d) BRIEF CONCLUDING REMARKS BY LOCAL AUTHORITIES.

Mr. Christopher Bushell (president of the Council) moved a cordial vote of thanks to Professor Sir Henry Roscoe for his able and highly valued address, and in doing so said the Council of Education was persuaded that the time had come – and probably the country was ready to recognize that the time should come—when the subject of industrial training and technical instruction should have most important attention [hear, hear, and applause].

Probably in none of the great towns of England had elementary education made greater progress and more substantial progress than in Liverpool during the past ten or twelve years. * * * .

The address given by Professor Roscoe would have a beneficial effect on public opinion not only in Liverpool, but throughout the country [applause].

Mr. S. G. Rathbone (chairman of the Liverpool School Board), in seconding the vote of thanks, said he was glad to see Professor Roscoe encouraging education in this city, in which his grandfather first moved in this great cause [applause]. He believed that by technical education, in the sense in which Professor Roscoe had used it, they should be able very much to diminish over-pressure in the schools. He thought the danger of over-pressure in a child's mind was very much lessened if the work became interesting to the child [hear, hear], and he was inclined to think that the most serious and dangerous kind of over-pressure arose from overstrain on the memory and by making children remember things in which they had no interest. They were on the eve of great improvements in the system of elementary education which would be far more effective than it had been in promoting the intelligence of the children [applause].

The vote of thanks having been warmly accorded,

SIR HENRY ROSCOE RESPONDS.

Professor Sir Henry Roscoe, in acknowledging the compliment, expressed his indebtedness to Mr. Rathbone for the kind way in which he had referred to his family, and he could assure him it was always a great pleasure when he came to Liverpool to do anything he could to assist in the great work which, as Mr. Rathbone had stated, was begun by his grandfather [applause]. In continuation of the remarks he had made, he wished to say that the effect of this technical instruction, was well understood on the Continent, and on one occasion, while travelling, some intelligent foreign manufacturers expressed to him the greatest anxiety and fear that England should some day or other awaken to the necessity of placing her industrial instruction on a similar footing to that existing in their country [laughter]. One of the manufacturers remarked that if that were accomplished by England, with all her advantages and her stalwart population, competition for them would become most serious, if not impossible. He thought these remarks would perhaps bring home to them the enormous importance to this country at this moment of the great question of technical instruction [applause].

The Rev. Chancellor Espin (Vice-President of the Council) next moved, and Professor Rendall (Liverpool University College) seconded a motion thanking the Rev. T. Stephens, M. A., and Professor Lodge for the services they had rendered to the cause of education by conducting and ably reporting upon the scholarship examinations, which was cordially agreed to.

On the motion of the Bishop of the Diocese, seconded by Mr. Clarke Aspinall, a vote of thanks was passed to the Mayor for presiding over the first part of the proceedings, and a similar compliment having been accorded to the bishop, the meeting terminated.

III.

INAUGURAL ADDRESS OF PROFESSOR HELE-SHAW.

The following extracts are taken from the address* by Professor Hele-Shaw, referred to in the introduction to the preceding account of the Liverpool distribution of prizes.

TECHNICAL EDUCATION.

* * * In the first place it may be well to ask what the term "technical education" really means? Most people have, no doubt, a general idea on the subject, but there are a great many who freely discuss the question, who would be woefully at a loss if asked for an exact definition; and if any one doubts the truth of this, let him try the experiment on a few friends. The answer which will generally be given, with some hesitation, will probably have some not very distinct reference to instruction in the use of tools, backed by allusion to carpentering by way of illustration, or will, perhaps, be some mention of chemistry, or other branch of science, or, as a final resort, "something to meet the German competition." Now the fact is that the first of these may not be really technical instruction at all, but only manual training as part of a general education, as, for instance, is now given out of school hours in the working of wood to the boys at most of our Colleges, partly to keep them out of mischief and partly to train the hand and eye, but in which case there is not the slightest intention or idea that any of the boys shall actually become a carpenter. The last answer, however grotesque it may seem, is much nearer the truth, as it connects technical instruction with a special *object* in view. Now that this is really the idea of those who have thought most carefully over the subject is made clear by the terse and excellent statement of the aims of the Association for the Promotion of Technical Education,† one of which is "to effect such reforms in our educational system as will develop in the best way the intelligence of those of all classes upon whom our industries depend," the Association itself being formed because of "the general expression of opinion throughout the country as to the necessity of a reform in our system of national education, with the object of giving it a more practical direction." Thus we may accept the following definition of a writer on the subject, that "by technical education is meant special instruction in some scientific, artistic, or mechanical process or handicraft as distinguished from purely literary instruction;" or that by another writer, who defines it as "special training for an industrial pursuit as distinguished from a general preparation for any calling hereafter to be chosen." Thus technical education will comprise a very wide range of subjects, not those merely taught with a view to manufacturing, mechanical, and artistic pursuits, but will comprise the instruction given in a medical school, in an agricultural college, and even commercial education, which last now forms a distinct feature of our own College, and the reform of which branch of education is one of the special objects of the Association above alluded to. It is therefore at first surprising to the uninitiated that we find the following definition in the recent Bill for Technical Education: "The expression technical instruction means instruction in the branches of science and art with respect to which grants are for the time being made by the Science and Art Department, or in any other subject which may for the time being be sanctioned by the Department." This definition is no doubt quite satisfactory to the authorities of the Department,

although it savours strongly of the opinion attributed in a well-known series of rhymes to a certain eminent University don, who is made to assert—

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*Part of Inaugural Address of session of University College delivered at St. George's Hall, Liverpool, on October 1, 1887, by Prof. Hele-Shaw, M. Inst. C. E., of the University College, Liverpool.

†See ante, pages 85–6, for reference to this Association.

> "I am the Master of this College,
> And what isn't taught here isn't knowledge."

And though this definition happens at present to exclude manual and workshop instruction, concerning which the mover of the Bill, Sir Wm. Hart Dyke, expatiated somewhat eloquently and at considerable length when moving the second reading of the Bill—but this is a trifling matter, as no doubt when the Science and Art Department has had time to go into the matter, and to study the subject, and has made arrangements for teaching and examining it, it will be "sanctioned" with the rest, and become technical instruction. It must, however, be recognized that the Science and Art Department is the most important institution in this country for the promotion and encouragement of technical education, and has done a work, especially in the direction of evening-class teaching to the artisan class, which must have proved of incalculable benefit.

IV.

SHEFFIELD, ENGLAND, PRIZE DISTRIBUTIONS.

TWO ADDRESSES ON "TECHNICAL EDUCATION" BY ENGLISH EDUCATIONAL OFFICIALS.

INTRODUCTION.

The following abstracts of recent addresses, delivered by two distinguished members of Parliament, who are also two of the leading English educational authorities, are from "The Schoolmaster" of January 7, 1888. They are of interest to American educators as showing incidentally the progress already made in Germany, and other Continental countries, in providing definite technical training; and, also, as testifying to the practical results of that training in enabling the manufacturers and artisans of those countries to successfully compete with the English; who, formerly, were easily their superiors in all that related to the "manufacturing," as distinguished from the "artistic," industries. Whatever arguments, based on these facts, are urged by these gentlemen in their advocacy of the adoption of similar methods of education by English communities, the same are, "*mutatis mutandis*," equally applicable here in America.

Mr. Mundella testifies to the surpassing importance of introducing the study of industrial drawing in all elementary schools, as an indispensable preliminary to all later technical training.

He touches upon the question as to what is meant by "technical education," and he is very clearly of the opinion that it cannot be given in the elementary day schools. He therefore urges that pupils when they have finished the course, be encouraged and assisted to supplement the training they have received in the elementary day schools by attending, after they begin their apprenticeships, night classes in the Technical School, where they may enter courses like like those given in the American Manual Training Schools; so that pupils leaving the elementary "Board Schools" at 14 years of age should be able to take a three years' course in Manual Training Night Schools.

Sir William Hart Dyke is as emphatic in expressing his conviction that this modern educational movement is based on a real demand; that it has arisen out of the pressing needs of modern life, and is, therefore, no mere ideal of visionary enthusiasts, but an actual problem which must be met and satisfactorily solved, unless the nation is content to lag hopelessly behind in the race for commercial supremacy.

Reference to this Sheffield School will be noted in the address by Professor Roscoe, which, with that of Professor Hele-Shaw, on the meaning of technical education, is given in the opening papers of this appendix.

The address by Professor Huxley, of which Mr. Mundella speaks such words of praise, was delivered at a public meeting "held in the Town Hall, Manchester, November 29, 1887," in response to a call by the Mayor to consider and take action upon certain proposals made by the National Association for the Promotion of Technical Education. This address, as it deals with the subject of "Technical Education" in the sense of special training for the development of technical skill, which is its usual meaning in the United States, as distinguished from the term "Manual Training," will be given at length in one of the appendices to Part III of this Report.

(*a*.) *ADDRESS BY MR. MUNDELLA ON "TECHNICAL EDUCATION."*

[Reported for "The Schoolmaster."]

The medals, prizes, and certificates won by the students at the Sheffield Technical School were presented by the Right Hon. A. J. Mundella, M. P. The occasion attracted a very large attendence. * * * After addresses by the chairman (Dr. Sorby) and Professor Greenwood, Mr. Mundella proceeded to address the meeting as follows:—

Let him congratulate them on their school. It seemed a long time before one had the opportunity of doing so, for though he had been working in this cause for twenty-five years, and for nineteen years had urged it on Sheffield, he felt, after all, that they had been very slow in obtaining a good technical school of their own. He congratulated them, however, that they were now met together within that very useful building, so well adapted for technical teaching. * * *. It was much satisfaction to him to find himself within the walls of a Sheffield technical school, for he had been afraid that, after all, there would not be in his time sufficient courage and liberality to produce such a building. But education was moving upwards rather than downwards; and they owed technical education very much to the impetus which had been given by the Elementary Education Act. Every branch of education had received a considerable impulse, and his opinion was that every branch of secondary education would be greatly improved as the result of the elementary education which was now being given to the whole of the population. * * *. The Hon. gentleman then referred to a recent speech on technical education delivered by Professor Huxley at Manchester. It was, he said, one of the most remarkable addresses ever delivered on the subject, and he urged members of the School Board and other practical educationists to obtain copies of it, in order that they might see what Professor Huxley, Sir Henry Roscoe, and other eminent men of science had to say. Professor Huxley began with elementary education as the foundation of all higher education, and of technical education especially. His (Professor Huxley's) criticism on our elementary education was that it was too bookish and not sufficiently practical. He agreed with Professor Huxley, who meant by elementary education being too bookish, that it was too much a matter of reading and memory and the teaching of books, and too little of oral demonstration and teaching by object lessons. The latter induced the thinking faculty of a child, which was, after all, the object of all education.

KINDERGARTEN METHODS EXTOLLED.

The method of teaching, by which children in the infant schools were taught to plait straws, to make cubes, and to do other little things which caused the brain and the fingers to work together, was of the highest importance as regarded their future teaching. But this object teaching and the teaching with the blackboard, implied an excellent staff of teachers. They could not commit such work to pupil teachers. It required an able teacher to keep the attention of an audience of young children, and to bring the lessons down to the standard of their minds. This, therefore, meant expense. Of that there could be no doubt, and Professor Huxley dealt with that part of the subject with much significance and much effect. One thing was stated by Professor Huxley which he thought any one who had had experience of elementary schools would agree with, namely, that it was impossible to teach technical education in elementary schools. The chairman had remarked that people were asking, "What is technical education?" Many people had very erroneous views about it, and they thought that if a boy went to school until he was fourteen, he could be taught not only literary and artistic, but technical education besides. No greater mistake could be committed. They could add technical education to the education of the elementary school.

DRAWING SHOULD BE TAUGHT IN EVERY SCHOOL.

What they could and ought to do, and what they must do, was to teach drawing in their schools, and make it obligatory in every school. He was not speaking of artistic drawing, but of geometrical drawing—the work of the eye and the hand. That teaching was of infinite value to every industrial pursuit. In Germany it was taught, not only to boys but also to girls; and he had no doubt it would soon be taught compulsorily in our own schools. Their central schools were eminently schools that were designed to train boys for commerce and for industry. They were not intended for classics; that was the work of the grammar schools, intended to lead up to the university. He could not say it was a kindness to take boys from the working classes—boys who would find a better field in commerce and industry—and give them a classic training and send them on to a public university, where they had professional aims, and become poor curates or teachers, without any means behind them.

HOW TO RAISE UP SKILLED WORKERS.

Send these clever boys to the central school, there to get a good practical knowledge of modern languages, book-keeping, and arithmetic, if they were designed for commerce; or to get a knowledge of chemistry, drawing, and a general outline of the science of light, heat, and electricity, if they were designed for industry. Then if those boys when they went into the work-shop, or to the mill, or to the manufactory, could be got to continue their training at the technical school for three years at night, they would have the opportunity of becoming valuable men, the non-commissioned officers of the industrial army, and of raising themselves in the social scale, and becoming useful citizens.

TECHNICAL EDUCATION DEFINED.

The question was often asked, "What do you mean by technical education?" Well, technical education, as the chairman truly said, was not teaching boys a trade, but it was teaching them the science which underlay their particular industry. What had science done for other countries? The English people had had greater resources, greater natural resources, than any other European people; but science, intelligence, could compensate even for the lack of natural advantages, and it had been found so. We had been doing a great deal of work for other nations; we had been providing them with a large amount of raw material, from which they had been able to find employment for their people, and to develop new industries. Take, for instance, the products of English gas works. The greater part of the products of English gas works went to Germany, and came back to us in the shape of dyes and other things. Great fortunes had been made in Germany out of the products of the English gas works. When he was sitting on the merchandise Marks Committee they had the watchmakers before them. Sheffield steel had a reputation on the Continent, which he hoped it would always preserve, but the whole of the springs in every watch in the country were manufactured abroad of Sheffield steel. Why should we not make them at home? We had seen trades move in a most extraordinary manner. Let them take for instance the marvellous change in the production of sugar. The Germans had applied a process which had completely revolutionized the sugar trade. A few months ago he had had staying with him a gentleman who was drawing many thousands a year from the French sugar refiners for the application of this method. They had extracted more sugar from beet than had ever been accomplished before by any other process. These men were persevering and earnest men, trained in technical schools.

RESULTS OF THOROUGH TECHNICAL TRAINING.

While we had been talking about technical education the Germans had been doing it, and they had done it so effectually that they had reaped a very rich harvest as the result. It was much easier to show the advantage of applying art to industry than science. Everybody could understand what a beautiful thing art was as applied to industry, but everybody did not see the immediate advantage of applying science. Art, as applied to industry, commended itself to everybody. Science was not so obvious, but it was more effectual. It had this influence, it rendered industry more efficient. What had happened within the last twenty years? Why, the quantity of coal required for producing a ton of steel had been diminished by something like two-thirds. That was an enormous economy, an enormous benefit to the world, and an immense saving of our coal resources. After referring to the electric light, he remarked that the effect of technical teaching was to give increased efficiency to industry, and to enable those who were technically trained to take advantage of new inventions, and to provide for new wants. It moreover enabled them not only to retain their industries, but to diversify them, to give greater varieties, and sometimes even to produce new industries. Technical training was a great social question as well as an educational question, because in a country like ours we could only feed the people, by the people producing something which they could exchange for food. It was of the highest importance that we should retain our commerce and our industrial superiority, so that we might be able to hold our own in all the markets of the world. He hoped he should be forgiven if he spoke faithfully as to his apprehensions about this school. The school had had only a short experience, but that experience had been most satisfactory. Each year there had been an increased number of students and an increased amount of fees. But what he was afraid of was lest the young men of the town should not sufficiently appreciate the advantages which the school afforded.

WHO SHOULD SECURE TECHNICAL EDUCATION.

What was the school intended for? There were many persons who thought that technical education was only desirable for the artisan class. There could be no greater mistake. The class that should first avail themselves of it should be the sons of manufacturers who intended to take their place as the captains of industry at the head of great commercial concerns. They would be much better employed in that way than in yielding to the temptations which beset them. If they did not, they might make up their mind to the fact that the class below them would do it, and would ultimately step into their shoes—and they deserved to do so. When he visited the school that day, and remembered the numbers that had been read out, he felt here was a capable school, capable teaching, excellent apparatus, but a great waste of power. By that he meant—and Professors Greenwood and Ripper would agree with him—that it was no more difficult to teach a large than a small class. That institution could train five times as many students as now attended it without any very considerable increase of expense. How long was that to continue? He put it to the youth of the rising generation—"Are you ambitious? Do you wish to rise above the sphere of the ordinary artisan? Do you wish to be a non-commissioned officer or subaltern in the army of industry? If you do, you must work—you must stoop to conquer." The radical defect of the age and generation with young men was that they did not work—did not throw their souls into their industries as was done by their fathers. The temptations of the social club, of the theatre, of amusement, of the evening cigar were too strong for many of them; and as a result they lived, so to speak, on their capital; they were not doing the work they ought to do in their day and generation. Others would pass them unless they showed more courage and more Spartan-like training and character.

SCHOOL ATTENDANCE IN GERMANY.

Just before he left the Council Office he was making inquiries throughout different German provinces of the numbers at school, and the numbers that attended after school age. He found that in the little province of Darmstadt, with a population of 987,000, one in five of the whole population was in regular attendance at school. That was from six to fourteen, as no child left school before fourteen years of age. Then he inquired about night schools, and he found that 27,000 odd of the population were in attendance at these higher, scientific, technical schools. They went from those schools from fourteen to seventeen years of age. That meant that in Sheffield there ought to be 9,000 young men, between fourteen and seventeen, at work in the night schools for three years. Had they anything of the kind to compare with that in Sheffield, and if they had not, why had they not? Need they wonder that the German clerk was in our city counting house; that the German chemist was all over the world; that German industry made progress? And our own young men were wasting their precious hours—he would not say in idleness and neglect, but in self-indulgence and in pleasant ease. A great deal of it was not their fault, because they had not had the advantage of institutions like that. Now he hoped they would turn over a new leaf. If they were to do so, not only the young men but the parents and the business men must be alive to it. Employers of labour ought to make it a rule that their young men should attend such classes, as was done in large establishments on the Continent. The Right Hon. gentleman alluded to the generous assistance the German Government rendered to technical instruction, and urged that there should be a resolve on the part of employers of labour in Sheffield that that school should be filled, and that every one of their young men should be trained and intelligent men. Prof. Greenwood had alluded to the imperfect character of the education of the young men who attended the classes; but he hoped the time was not far distant when they would have an excellent grammar school in Sheffield that was sufficiently large to accommodate a very large proportion of those in Sheffield who sought secondary education. He hoped, too, that the central school would do what it could to keep itself in touch with the technical school. That was what it should do; for he felt sure that next session Parliament would pass a measure giving authority to School Boards to establish technical schools and to subsidize them.

OFFER OF SCHOLARSHIPS IN THE TECHNICAL SCHOOL, BY THE SCHOOL BOARD, SUGGESTED.

What he would recommend the Sheffield School Board, then, to do was to give some scholarships in the technical school. They were not costly; he believed technical education could be obtained there for a pound or two a year—(Prof. Greenwood: "Yes.") They should give three years' scholarships to the best trained boys, who were willing after leaving school to come to the technical school at night after finishing their day's labour. These scholarships would do much good, for although a pound or two may not seem much, it was a good deal when it had to come from a poor family. * * * He expressed an earnest hope that this condition of things would be remedied, for he was certain that Parliament would put into the hands of School Boards the power to remedy it. In conclusion, he referred to some letters in *The Times* written by Mr. Samuel Smith, late member for Liverpool, descriptive of his visits to German schools. Mr. Smith, he said, had stated that he saw none of the squalor, misery, and wretchedness which he saw at home. The people seemed all hard at work and prosperous, although wages were very much lower than they were in England. The truth was, said Mr. Mundella, the Germans had descended in commerce to what we shall have to descend to in agriculture—*petit* culture. They would not have to dispense with small trades. They would have to engage in all trades that were requisite or necessary to employ the masses of our population; and in order to attain that end they could not do a more useful work than to enlarge the knowledge of our people in applying science to industry.

(*b.*) *CONCLUDING REMARKS BY LOCAL AUTHORITIES.*

Sir Henry Stephenson, in the absence of Sir Frederick Mappin, proposed a vote of thanks to Mr. Mundella. He said that for many years the right hon. gentleman had been like a prophet crying in the wilderness to a stiff-necked people, and he must now be glad to see that at last his exhortations had been listened to. We appeared to make little progress in new inventions, applications, and industries, and he (Sir Henry) confessed that he did not grudge the Germans their success, for they deserved it. The Germans showed great adaptability and enterprise, and he hoped we should take the lesson to heart and emulate their example. He thought the central school was a matter of great congratulation to the town. They all acknowledged that it was specially aimed at fitting those who went there for commercial pursuits, and they all felt the necessity of technical education being taken up in earnest by the Government. The technical school would languish, and he would go further, must ultimately fail, unless there was some support given beyond annual subscriptions.

The Mayor, in seconding the motion, said he quite agreed with Mr. Mundella that they should not send children of our artisan class to the grammar school, with a view to their being sent to the university. It was quite true that one or two succeeded; but experience had shown that the great bulk of them did not succeed, and they became curates or poor teachers. Whereas, if they had gone to the central schools and had struck out a course for themselves, not strictly professional, they might have made their mark in the world. He heartily approved of the suggestion of scholarships in the central schools; pointed out the absurdity of the proposal of a poll to enable the School Board to make a grant in aid of technical education, and in conclusion expressed the hope that the scholarships obtained from Birley's Charity would be well and wisely given.

The motion was carried with loud applause.

Mr. Mundella was again very cordially received on rising to acknowledge the vote. He did not, he said, wish to be misunderstood on the university question. He did not say that there might not be occasionally some genius from any class who might distinguish himself at a university, and become not only an honour to his town, but to the nation. But, as a rule, it would be a greater advantage to a gifted youth of the artisan class, [to be thoroughly trained in a knowledge of science and of its applications to the industries,] and they should get a practical education to be followed up by the excellent technical teaching they would get in those schools, so that they might carry their intelligence into the walks of commerce and industry, and serve their generation in a way poor struggling scholars having a university education could not do. He could conceive of nothing more trying for a young man coming from the artisan class, than that he could have won his scholarship, gone to a university, and then find himself without friends—a scholar and an associate of gentlemen and no career before him. Sheffield had this week lost two of her ablest and noblest citizens. They were men—Mr. Jessop especially—who possessed that kind of genius we wanted more of;—the application, ability, and intelligence which knew no difficulty, and the possession of which made successful and honourable men.

(c.) *ADDRESS BY SIR W. HART DYKE.*

Sir W. Hart Dyke, Vice-President of the Committee of Council on Education, visited Sheffield, and distributed the Lancasterian Scholarships and the principal awards gained in the day and evening departments. of the School Board Central Higher Grade Schools. The gathering was held in the Albert Hall, the largest meeting-place in the town, and, despite the unfavourable weather, there was a very large attendance. * * * .

Sir W. Hart Dyke, after referring to education at Sheffield, proceeded—He believed that the movement with regard to technical education was a real substantial demand for a change in our educational system, and not a sham. Why? Because in Sheffield, Bradford, Manchester, Huddersfield, Preston, in Yorkshire and Lancashire—throughout all these vast industrial communities a gap had been detected in our educational system. In these places the shoe pinched, and the loss was felt. It was discovered that we had been long heavily handicapped in our struggle for commercial mastery against our Continental rivals because of our deficiencies in respect to technical education. Our hard-headed men of business had found out that they were not having fair play when brought into competition with foreigners. It was therefore a healthy sign that the movement should have come from the large centres of industry, and in his view it was one which should be fairly met by the Legislature. It was a matter we could not long neglect. During the last session he was on a committee to deal with the difficult problems of school endowments. Incidentally most conclusive evidence was given that the watch-making and coach-making industries had suffered extraordinary loss in this country, because the technical knowledge and training of foreigners had enabled them to gain such a start and show such extraordinary results that we had to follow hopelessly in the rear, or be content to go to these foreigners and take a leaf out of their book, instead, as in the good times of old, of being the great leaders in those industrial matters. He would not detain them in trying to establish the absolute necessity for legislation on this subject. It was the firm determination of the Government not only to bring in a Bill, but to carry it through during the coming session. But there were difficulties. There was no doubt that in Sheffield, as Sir H. Roscoe had said, a very small amount of imperial assistance or aid from the rates would enable them to carry out an excellent system of technical instruction. But Mr. Mundella and others were a little too anxious, perhaps, that we should carry out a vast and complete system that would come into working order at once. His own opinion was, both when he introduced his late Bill and now, that if we endeavoured to carry a large and comprehensive scheme which would to-morrow embrace every class of the community, we should fail in our endeavour. But it would be hard on communities like that of Sheffield that no Bill whatsoever should become law. He was anxious that we should lay a firm and sure foundation, upon which a good and successful structure, which could have national application, might ultimately be built.

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V.

TECHNICAL EDUCATION IN BOARD SCHOOLS.

By Rosamond Davenport-Hill.

INTRODUCTION.

The following extracts from the article on Technical Education in the London Board Schools, which appeared in the May, 1888, number of the Contemporary Review, will be found of interest as showing the existence and the progress of a movement towards the general introduction of elementary industrial training in Schools in England, as well as in the United States.

Where the systems of public education are so different as are those of Great Britain, and the several States which are comprised in the United States, comparisons are necessarily inaccurate and misleading. In a general way it may, however, be stated that the Board Schools of English cities, bear some resemblance to the public school system of the cities and towns in the United States. An important difference, however, is found in the fact that in this country, all public schools are free; and all children, not otherwise taught, are expected, or required, to attend them, as a matter of right and duty; while, in Great Britain, tuition fees are exacted from all children who attend school and, if any are exempted it is, generally, only after the humiliating proof of the poverty of the parent has been set forth. In other words the education of the children is, in American communities, regarded as the *right* of the children, and the *duty* of the community; while, in England, the education of the child is left to the parent; and the free instruction of children is there regarded as a "charity," whether extended by individuals, or by the community.

Perhaps no more essential and characteristic differences between the two countries and people exist, than are to be found in their divergent views of popular education; nor any more far-reaching in their influence.

The article in question opens with a frank recognition of the two meanings which are attached to the term "Technical Education," and clearly defines the one with which it is concerned, as follows:

> The words Technical Education have now two distinct meanings—one, the teaching of a specific art or trade; the other, instruction in elementary science bearing on all arts or trades, and the training of the hand and eye, which together facilitate the acquisition of any art or handicraft the pupil may select when he quits the school for the workshop. It is with Technical Education in this latter sense the following pages endeavor to deal.

The growing need for some form of industrial training is plainly set forth in words which might well apply to the situation in this country:

> For several years a feeling of alarm has been growing up in this country that we shall lose our position as one of the first, if not the first, industrial nation in the

world. Foreign manufacturers, it is said, are driving our goods from the markets abroad, while foreign artisans are taking the place of British handicraftsmen in our very midst. Free Trade has opened our ports to all foreign-made goods, while the Protective policy pursued by most Continental nations prevents a like sale of our goods abroad. Our complete political freedom also naturally attracts foreigners to our shores, who, it is alleged, are, by the superiority and cheapness of their work, able to undersell our own artisans.

If these allegations be true—and, though there may be some exaggeration, they have no doubt a large substratum of truth—what must be done to prevent our losing our place among the nations? Free Trade we cannot abandon, and we must console ourselves under our present trials by the fact that our sufferings from bad trade have not been greater than, if so great as, those of other countries in which a Protective policy has prevailed. Nor can we prevent foreigners from settling among us. It would indeed be most unfair in us to drive them away, when our own sons and daughters go to seek their fortunes all over the world. Moreover, such a course would be shortsighted in the extreme, as we should, without doubt, provoke reprisals from other nations. Happily for us, the alarm lest we should lose our position has created the desire to find some means of averting the threatened evil. This desire has been slowly spreading until recent events seem to show that the nation is at last thoroughly aroused and will hurriedly seek the remedy we need. It must be borne in mind, however, that in our haste we may fall into errors we might have avoided had we been earlier aware of our danger, and had we been able to adopt our remedial measures with greater deliberation. We may, therefore, expect that false steps will be taken, sooner or later to be retrieved, before we succeed in affording to our artisans the means by which they may hold their own against other nations. * * *.

WHY DO FOREIGN ARTISANS COME TO ENGLAND?

The foreign artisan comes to England because he has a reasonable expectation that he will be able to support himself here by the work of his hands. What reason has he for entertaining this expectation? It must be confessed that he can work cheaper, and in some cases better, than our own artisans. The cheapness of his labour I do not propose to discuss. It is a characteristic which will cease as soon as the foreigner appreciates the greater comfort our artisans enjoy, the shorter hours they work, and the better sanitary conditions under which they may live—all requiring a larger income than is sufficient to procure the bare necessaries of life. The superiority of work is the real point to which we must turn our attention. We cannot admit that the intelligence of the foreigner is greater than that of our own countrymen. Is it not that his intelligence is more completely drawn out by the better education he receives—an education more fitted to prepare him for the struggles of his future life than that which we afford to the children of the working classes at home?

While providing a certain education for the head, we have neglected that of the hand. Our neighbors have been wiser in their generation, and hence the superiority of the foreign artisan. I must, however, on no account be understood to be making a sweeping assertion that every foreign artisan, of whatever kind or from whatever country, excels his English collaborator. In many trades, I believe, the British artisan is inferior to none. Nevertheless, the foreign handicraftsman in some departments of trade is beginning to take the place of our native workers. For instance, it has been stated by master tailors that the foreign journeyman is driving out the native workman. Our lads, except those brought up in reformatories, industrial or pauper schools, or orphanages, are not taught to use the needle sufficiently early to give them the dexterity essential to make a good needleman. Doubtless, it is this lack of manual dexterity which hinders our artisans in various employments from becoming as good workers as their foreign compeers. Efforts are, I believe, being made in various parts of the country to supply this want in our primary education. I will deal chiefly with those of the London School Board, because I have but little acquaintance with what has been achieved in the provinces or among voluntary schools in the metropolis.

LONDON SCHOOL BOARD INFANT SCHOOLS.

In the infant departments under our Board, boys have for many years been more or less taught to use their fingers in sewing, knitting, modelling, and other Kindergarten occupations; but at seven years of age, when they enter the boys' department, they drop all the manual occupations they have before practised, with the exception of drawing and writing, which only exercise the right hand, and that in an incomplete manner. Girls have, meanwhile, had an advantage in this respect over their brothers—one of those rare instances in which the female has been better treated than the male. The hand training carried on in the infants' department is continued in the girls' school by means of plain sewing and elementary cooking—handicrafts, if we may so call them, which are intimately connected with the occupations of their future life. This instruction gives girls that dexterity of hand which prepares them at a more mature age for the specific training by which they may become skilful professors of the culinary or the dressmaking art. But when a lad of thirteen or fourteen begins to learn his trade, he has lost any little manual dexterity he may have acquired in the infant school; and this he must regain before he can achieve success in his handicraft—often a tedious, and sometimes, it would appear, an impossible process, because, in the lapse of time, his fingers, for want of exercise, have become clumsy. It is to avoid this obstacle that children are made to begin their factory life at a tender age.

VARIOUS AUTHORITIES ON VALUE AND METHODS OF TECHNICAL TRAINING.

As long ago as February 1883 a Special Committee was appointed by the London School Board "to consider and advise how far the Board might facilitate technical education, or co-operate with those bodies who were carrying it on." The Committee examined several witnesses, well able from their knowledge and experience to give valuable evidence on the subject. Among them were Professor Thompson, Mr. Trueman Wood, and Sir Philip Magnus.

Mr. Thompson, Professor of Natural History at University College, Bristol, now Principal of the Finsbury Technical College, strongly recommended the teaching of drawing, especially mechanical drawing, and also modelling in clay. He suggested, too, that the experiment might be tried, on a small scale, of teaching handicraft in our schools, and he believed that some of the ordinary trades which work in wood or stone might be thus introduced.

Mr. Trueman Wood, Secretary to the Society of Arts, recommended the teaching of mechanical drawing in all elementary schools. Elementary science and mechanics should also be taught, illustrated with suitable apparatus; but he did not consider it advisable, even if it were possible, to teach specific trades in elementary schools, though he quite agreed "that general instruction in handicraft would be useful, by teaching the children the use of tools without reference to special trades," and he believed that the experiment of fitting up a workshop in one of our schools was worth trying.

Sir Philip Magnus, in answer to the question, how the School Board could aid in the development of technical education, said:

"He thought it might render such assistance in various ways. Instruction should be given in the elementary schools in machine drawing. Better instruction might also be given in freehand drawing, of the defects in which the Institute's examiners in technology generally complain. In a large number of schools workshops might, with advantage, be established, in which a certain number of the more advanced boys might have the opportunity of gaining instruction in the use of tools in the same manner as is done in the primary schools in France under the new Act. It would be a great advantage to the boys on leaving elementary schools, be their occupation what it may, to have acquired the facility of using their hands, and to have gained a knowledge of the properties of different kinds of wood, as well as of iron and other metals, which could only be obtained by working these substances themselves. By the establishment of workshops in schools the boys, when apprenticed, would advance more quickly in their career, and reality would be given to their scientific instruction as well as to their lessons in mechanical drawing. He considered the great want of this country to be higher elementary or intermediate schools of a technical character * * * * Pupils in elementary schools, having a taste for art, should be taught modelling, the study of which is not sufficiently developed in this country."

He thought "that the Board might further aid in assisting technical education by the loan of its rooms for the formation of evening classes, it being always understood that, in order that the instruction should be of any use, it must be of a practical character, and that the classes should be well furnished with all necessary models, apparatus, &c."

TECHNICAL EDUCATION IN OTHER CITIES.

Communications were also received from the Clerks of the School Boards of Glasgow, Manchester, and Sheffield. In the two former cities local associations had relieved the Boards from the necessity of affording technical instruction; but, nevertheless, in Manchester the Board had introduced a lathe and a group of joiners' benches into class-rooms of two of their schools, and each scholar in the higher standards of the school takes his turn at the manual exercises, receiving one or two lessons a week, a joiner being present to give the instruction. No extra charge is made for this. One of the schools is the lowest under the Board, for two-thirds of the children are admitted free, while the other is attended by the sons and daughters of artisans and small shopkeepers.

TECHNICAL TRAINING IN SHEFFIELD.

The Clerk to the Sheffield Board gave information respecting the admission, the examination, the fees, the subjects of instruction, and the results of the Central Higher School established in that town. In the workshop attached to the school the practical work contemplated includes (1) the production of simple but perfect geometrical forms to teach accuracy and skill in the use of tools; (2) the construction of models in wood for use as examples in model drawing; (3) the construction of simple apparatus to illustrate, by actual experiment, the principles of levers, pulleys, wheel and axle, the crane, and strain on beams with different positions of load; (4) the mechanics of the roof, arch, and bridge; (5) for more advanced pupils the construction of apparatus illustrating lessons in machine construction, applied mechanics, building construction, and mechanical engineering. He added that there is a system of scholarships by means of which from fifteen to twenty specially clever boys and girls are enabled to pass from the ordinary schools to the technical instruction at the Central Higher School.

I have just learned from the Clerk to the Sheffield Board that girls, in addition to the ordinary subjects, learn in this school physiology, hygiene, theoretical and practical chemistry—a few take mathematics, and cookery is to be introduced next year. For girls in Standards VII and ex-VII, physiography and French are also added.

There is no doubt that the opportunity of attending this school induces both boys and girls to remain much longer under instruction than they otherwise would. Such training is found to be no less useful to those who apply the special knowledge they gain in industrial pursuits than to those who become teachers. Indeed, by far the greater proportion of female pupil teachers employed by the Sheffield Board come from the Central Higher School. The education they there receive prepares them to pass through their career as pupil teachers without undue strain on their health and strength.

From the evidence adduced the Technical Committee of the London School Board arrived at the conclusion that it was not desirable to teach special trades or handicrafts in the schools of the Board. They believed that such teaching was beyond the scope of a body whose duty it is to direct elementary education, though at the same time they were convinced that elementary education ought to include such subjects as should prepare the pupils for learning the trade or handicraft they might choose when they had quitted the school.

WHAT HAS BEEN DONE BY THE LONDON SCHOOL BOARD.

These views were adopted by the Board and consequent improvements in our methods of teaching have ensued. We appointed a peripatetic science teacher, thus following, but only to a limited extent, the practice of the Birmingham School Board, which, for several years past, has given instruction in elementary science in this manner in all its schools, to both boys and girls. This peripatetic science instructor is a professor, so to speak, who visits certain schools once a fortnight and gives practical lessons in mechanics, illustrated by suitable apparatus, to boys in the upper standards. Like instruction is carried on by the schoolmasters between the fortnightly visits of the science teacher. The instructor visited about twenty schools, and the experiment has proved so successful that, in the early part of 1887, three more science teachers were appointed. This number will enable about eighty schools (boys' departments) to be brought under the practical teaching of mechanics at a cost for the whole number of nearly £1200 a year. Eighty, however, is but a small proportion of our schools, numbering now nearly four hundred.

A carpentering class has been formed at the Beethoven Street School at the request of the head-master, and has proved both popular and successful, and what is of greater importance, is the means of retaining boys longer in the school than they would remain if no such class existed. The master, speaking of the lads not yet old enough to share its benefits, says: "Many wistful eyes are turned towards the open workshop door by the younger boys during playtime, and they speak of the time when their turn shall come."

THE SWEDISH SLÖJD TRAINING.

Before the Technical Committee closed its deliberations, it received evidence bearing on a method for training the hand and the eye based on scientific principles which originated in Sweden. This method has been named the Slöjd by its founder, Herr Abrahamson, of Nääs, near Gothenburg.* It is now well known on the continent of Europe, has been described in educational reports in the United States, and adopted in some schools; but it has only recently begun to attract attention in this country. Slöjd is a Swedish word which has no equivalent in English. It, however, may be translated by the term education through the hand, or "hand-training" as a means of education as distinguished from hand-training as a means of learning a trade.

Perceiving that the education of the head, unaccompanied by that of the hand, would not prepare the rising generation of men and women for their future battle of life, Herr Abrahamson founded a school on his estate in which teachers could study a method of developing the powers, both mental and physical, of their pupils, with the definite object of giving to them general manual dexterity and of implanting in their minds both respect and love for labour, even for the rougher kinds of handiwork. Slöjd is also intended to foster a love of neatness, order, cleanliness, and accuracy; to induce habits of attention, industry, and perseverance; to develop the physical powers, and train the eye to the perception of form and beauty.

Among other phases of the subject it will be observed that the writer points out the bad result to the boys in the loss of dexterity which they suffer, owing to the gap that exists between the Kindergarten training that ends at six or seven years of age, and the time when, after this omission, for several years, of any form of manual training, the learning of a definite trade is attempted.

This article, in thus contrasting the experience of the boys and girls in their occupations during this period of their training, illustrates the need that exists for the discovery and adoption of a continuous, progressive, logical system of manual and mechanical development, extending through all grades of schools; from the first occupations and games of the Kindergarten, to the time when the pupil is qualified to enter the door of the workshop, or factory, and ready to be there taught the special skill of any trade.

The need of such progressive methods is equally apparent whether the pedagogical or the practical aspects of the subject are considered. As already recorded some very promising experiments looking to this end have been begun in the public schools of Washington, District of Columbia. Whatever else may be desirable it is believed that the courses of Industrial Art drawing after the methods indicated by the late Professor Walter Smith, are of the greatest value both educationally and practically; and that, if thoroughly persisted in, they will go far towards supplying the needed training during the years that must elapse between the Kindergarten and the Manual Training Schools of carpentry and blacksmithing.

Incidentally, in this account of what is being done in the schools of London, the efforts in some other English cities are succinctly described. A most interesting account of the Swedish system of industrial training in woodworking, called "Slöjd," with a description of the personal experience of an English scholar, Miss Warren, and of a subsequent visit to the school at Nääs by the author, are given, which want of space compels me reluctantly to omit.

This Swedish wood-working system was fully described by Professor Ordway in an Appendix to the 46th Annual Report of the

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*The definition of the object at which Slöjd aims, and the description of the method pursued in the attainment of this object, are taken from a paper sent to me by the Director of the School at Nääs The whole of this paper was printed in the *Journal of Education* for February 1887.

Massachusetts Board of Education (1882) and is referred to on pages 66–70 of Part I of this Report.

An account of the school at Nääs, and of the present development of Slöjd, compiled by the author of this Report from various authorities, is also given in the present volume. See Appendix L, Paper IX, pages 863–892.

OBSTACLES TO THE INTRODUCTION OF EDUCATIONAL EXPERIMENTS IN THE SCHOOLS OF LONDON.

* * *. The School Board was so much impressed, by Miss Warren's evidence, with the importance of Slöjd teaching, that it was decided to establish a Slöjd class as an experiment, and Miss Warren was to be its head. She, however, very soon quitted our service to become Superintendent of Kindergarten method under the Leicester School Board. Her departure and other unforeseen delays prevented our commencing our experiment till the autumn of 1887, when Miss Clark, Miss Warren's companion at Nääs, gave a course, lasting three months, of instruction, at one of our schools, to a small number of boys and girls, who attended as volunteers on Saturday mornings. Its success encourages us to continue the class, but we have been met by a difficulty which is an obstacle in the way both of this experiment and of the one carried on at Beethoven Street School. It is this: technical instruction, with the exception of the teaching of sewing and cooking, is not one of the subjects included in the Educational Code, and, in providing the necessary material and tools for our experiments, the Board overstepped its legitimate powers. Nevertheless, it was considered advisable to try whether the Department would sanction manual training, a subject of instruction so manifestly advantageous to children in elementary schools. The result has proved—what has previously been the case—that the Board must act as pioneer to the Education Department. The cost we have incurred was, in the first instance, surcharged by the auditor, and though, on our petition, it has been since allowed, it is on condition that we spend no more money on manual training. Consequently, the expense must be defrayed from our private purses, or our experiment must be abandoned. In order to leave no stone unturned, we sent a memorial to the Department, in which we have asked whether certain articles of the Educational Code may not be so construed as to permit manual training. But the Department has answered that it could arrive at no decision on this subject while the scheme for technical instruction laid before Parliament last session was still under discussion. This Bill was discharged before the House rose last autumn. But as in all probability the same or a similar Bill will be brought in during this session, we need no further response to our memorial for the present.

PROGRESS IN ADOPTION OF TECHNICAL EDUCATION.

The question of technical instruction has progressed with so great a rapidity during the last few months, that we may look forward with confidence to a change in the law which will enable the Education Department so to modify the articles of the Code as to permit manual training being carried on in all elementary schools. But here a danger rises against which we must guard. The Bills discharged last session—one brought in by the Government and the other by Sir Henry Roscoe—deal exclusively with schemes for affording technical instruction to those boys who shall have reached the upper standards, omitting those whom unfavourable circumstances prevent from attaining to a position sufficiently high to share in this instruction; thus, in fact, helping those only who are best able to help themselves. Again—a more serious defect—they postponed manual training until thirteen or fourteen, an age, as has been seen, too advanced for dexterity to be easily obtained. It will be therefore necessary to watch the new Bill, and endeavour to adapt its provisions to the real needs of the children of the working classes.

CITY AND GUILDS OF LONDON INSTITUTE CLASSES.

In the spring of 1887 classes were opened at the City and Guilds of London Institute for the purpose of giving instruction in the use of tools to masters engaged in elementary schools. They were largely attended by teachers under the London School Board. Professor Unwin, under whose general guidance these classes were carried on, is of opinion that the pupils not only exhibited an enthusiasm in their studies, but a facility in acquiring practical skill he did not expect in men of their profession. A good proportion of the students, who had taken an elementary course during the spring and summer, returned to the Institute when the autumn session opened, and joined another advanced course, while at the same time fresh pupils formed a new elementary class. Thus are our masters preparing themselves for carrying on the technical instruction of our elder pupils so soon as the necessary alteration in the law permits.

Happily, however, the Board is not compelled to await the decision of Parliament before, at least, trying to introduce manual instruction in our boys' schools. The City and London Guilds have contributed a sum of £1000 for the purpose of establishing classes for teaching the use of tools. The experiment is to be continued for twelve months. Six centres for such instruction have been chosen—three on north and three on the south of the Thames, in which classes are carried on in buildings belonging to the School Board. They were opened in January of this year, and are under the joint control of a committee representing the Institute and the Board. But here, again, is a possible danger to be guarded against—that, namely, of giving instruction in a particular trade in contradistinction to preparation for handicraftship generally. We must not turn our pupils into premature artisans while they are yet in schools and too young to choose their vocation in life: moreover, they will learn their trade far better in a workshop than in a school, where, to a certain extent, the work must partake of an amateur character.

It will be seen that the "City and London Guilds," have come forward to aid in the new educational experiments, just as many citizens and corporate associations have done, from time to time, in the United States.

The article sums up with a statement of the technical education now given in the Board Schools, and concludes with a full endorsement of the value and feasibility of the proposed industrial training in schools.

* * *. Elementary science, under the name of "object lessons," is one of our compulsory subjects, though it requires a much greater development and far better methods of teaching. Freehand drawing, which should develop a taste for art, is taught in all boys' departments, though it is taken in only a few of the girls' schools. Social economy, as Mr. Ellis designated the truths he taught, need not absorb a large amount of time, while the moral lesson they convey should pervade the whole government and discipline of the school. With regard to manual training—for the girls we have sewing and cooking; some sweeping and cleaning might be added. A good beginning in such training may be introduced into the boys' departments even under the present Code, though, as we have shown, it will need modification for the fuller development of education through the hand. The time spent in this training will be no real loss to the literary side of education, for the change of thought and employment necessitated by manual occupations will enable the pupil to return to the schoolroom so ready for hard study that he will soon make up for the interval which has been devoted to the education of his hand.

Improved methods of teaching will make learning easier to the pupil, and, what is of far greater importance, draw out his intelligence, thus enabling him to acquire knowledge by himself long after his school education is finished. That there is great room for improvement in the subjects we teach, and in our methods of teaching them, is perhaps apparent to no one more clearly than to members of the School Board themselves. It is this conclusion, the result of years of experience, which led to the appointment, in March 1887, of a Special Committee "to consider the subjects and modes of teaching in the Board's schools" with a view to their improvement. To help us to attain our aim, the Committee has sought the advice of those whose knowledge and experience on the subject have been proved in various ways—teachers in elementary schools, professors from technical colleges, persons whose occupation it is to train teachers and examine schools, gentlemen and ladies whose interest in education has led them to observe and consider the merits and demerits of various methods by which it is carried on both at home and abroad, and working men, whose opinion we sought on the kind of hand-training it is advisable to give. The evidence we have received has convinced us that henceforth hand-training must occupy a place in our school course, while we have arrived at the same conclusion as the Committee of 1888 that the teaching of definite trade is entirely beyond the scope of our work.

THE KINDERGARTEN PRINCIPLE APPLICABLE TO PUPILS OF ALL AGES.

The Committee also believe that the Kindergarten principle should no longer be limited to infant departments, but that it should govern the whole school life of the pupil. The old-fashioned mode of teaching by words and not by things is fast giving way to the new one—that which teaches by experience instead of by dogma. Such is the Kindergarten principle, as fitted to the boy or girl of fifteen as to the infant of five; needing only that its application shall be adapted to the age of the pupil. This principle is embodied in the Report the Committee presented a few weeks since to the Board. Its adoption is under discussion at the present moment. Should its recommendations be carried into effect, we shall at least have grasped the soundest principle of education yet discovered, and may hope to better prepare our pupils for their future vocation than we can under our present system.

The objections on the ground of increased expense are considered at some length and finally disposed of by the following terse statement of the argument which, in America, is thought broad enough and weighty enough to justify the entire system of public education.

* * * The public must decide. It should, however, bear this fact in mind, that the cost incurred in education is spent quite as much for the benefit of those who pay it as for that of the persons educated—ignorance being most costly to the community, as the chief source of poverty and of crime. Is it not wiser, then, if we consider the subject on no higher ground than as a pecuniary question, to spend money in making good citizens rather than in repressing bad ones?

VI.

HOW TO GAIN TIME FOR INDUSTRIAL STUDIES.

PRACTICAL SUGGESTIONS BY AN ENGLISH EDUCATOR.

That our American advocates of the introduction of industrial training in the public schools, are not alone in thinking that by wise changes both in the methods of teaching and in the studies taught, time for the new studies can be gained ; and, also, that some training in the practical application of the studies taught, looking to their immediate utility in the transactions of every-day life is desirable; is shown by the accompanying extract from the letter of a correspondent which appeared in a recent issue, July 1st, 1887, of "The Educational Times, and Journal of the College of Preceptors," a well known English authority. The writer inveighs against "The old school Table-Book and Sum-Book," and protests against compelling the children to memorize obsolete tables, retained in the curriculum of the schools only by the fact that the examiners continue to question upon them.

CHANGES SUGGESTED IN TOPICS STUDIED.

* * * For my own part, I should like to see banished from our schools, not only illegal Weights and Measures, which I hold to be clearly indefensible, but also those which, though recognized by law, are not in common use. How few are the occasions when ordinary persons require to make calculations in Troy Weight, Apothecaries' Weight, Cloth Measure, and the minutiæ of Ale, Beer, and Wine Measure ! How soon these things, learnt in school, are forgotten when pupils have gone out into the world, and what a waste of time the whole business is !

One of the greatest boons conferred by the French Revolution, upon the people of France, was the abolition of the old system of Coinage and Weights and Measures, and the introduction of the present Decimal System, which has done so much to facilitate trade, and to simplify arithmetical calculations. What Frenchman, in his senses, would think of reviving the use in schools of the old discarded Weights and Measures, simply in order to supply additional practice for children in calculation? Yet that is what is gravely done and advocated by many English examiners, school inspectors, and teachers who, as Herr Dummkopf, with pardonable exaggeration, says, "worship the horrid thing (the Table-book) as if it came down from heaven, and who would sooner pluck out their right eye than give up the pleasure of torturing innocent children with it."

No harm, so far as I am aware, has occurred in France to the study of the Mathematics by the abolition of the old Weights and Measures ; nor would anybody be the worse, but rather the better, in England, if we ceased to teach Tables which are either false in themselves, or not worth learning or remembering, and which are, for the most part, mere relics of barbarism, retained out of a stupid adherence to old custom, or a sentimental belief that they are valuable instruments of intellectual culture.

IMPORTANCE OF ARITHMETIC.

This matter of the Weights and Measures is, of course, only part of the larger question, whether Arithmetic generally should not be made a more practical subject of instruction than it is at present. In view of the great competition and struggle going on all around us, the pressing demand of the present day is that our children should go forth from our schools better equipped than formerly for the campaign of life; and few subjects of school instruction have a more direct bearing on the future career of children than the art of calculation, which to many furnishes the very tools by which they earn their daily bread, and to all is, in various ways and degrees, indispensable. Many may contrive to rub on, in a fashion, with little knowledge of Geography, History, Grammar, or Literature; but few can with impunity dispense with an acquaintance with commercial Arithmetic. It is the quickest and most expert calculator that is likely to win the prize, now-a-days, whether in the mart, the warehouse, the workshop, or the counting house. It is very true, as examiners and school inspectors are fond of reminding us, that in the Universities our future clergymen, lawyers, and statesmen study the Mathematics, not for its applied uses, but for its mental discipline; though some of these, we may suspect, might with advantage exchange a little Conic Sections for some acquaintance with the graces of elocution and oratory. No one denies that Arithmetic is a science as well as an art, and that children should be duly instructed in the *rationale* of the various processes they employ; but what is wanted in our schools is a closer application of the teaching to the requirements of daily life.

GRAMMAR AND COOKING.

When the learned lady in Molière's play complained that her cook spoke bad grammar, her husband replied that he did not mind that so much, as long as she compounded her dishes of the correct ingredients, and did not put too much salt in his soup. The whole play is a clever satire upon the highfalutin notion of seeking lofty ideals, while neglecting the common-place affairs of life. In much the same way, we talk a good deal about Technical Education, and would pursue it in some grand style; by the erection of palatial buildings, costly laboratories, and the institution of high-class lectures. But this is only to chop wood with razors. What is really wanted is to make the present imperfect system of education of our ordinary schools more conformable to the work to which most of the scholars will afterwards have to devote themselves.

WHY NOT ADAPT ARITHMETICAL EXAMPLES TO DAILY NEEDS?

In Arithmetic, for example, we could well do with a little less of complex and continued fractions, circulating decimals, puzzles, conundrums, and other academic problems never met with anywhere outside the class-room and the school sum-book. In the place of these, we might have more questions framed in the language and phraseology of the market and the workshop. Such things, for instance, as calculations of the price of goods, making out estimates for work, the average daily, weekly, or yearly takings of a tradesman, the fluctuations in the weekly wages of artisans, and such like computations, with perhaps as much of Book-keeping as relates to simple examples of receipts, and the use of a balance-sheet and a ledger.

An indication of the strong feeling setting in for a reform of our common schools is to be seen in two Bills now before Parliament to give local authorities powers to establish day-schools and evening classes in which shall be taught the use of ordinary tools, commercial Arithmetic, commercial geography, book-keeping, French and German and other modern languages, freehand and machine drawing, and any other subjects sanctioned by the Committee of Council on Education. These Bills, introduced by Sir Henry Roscoe and Professor Stuart respectively, are not likely to pass this session; but when they do Herr Dummkopf may console himself with the reflection that there will be some schools where the objectionable old Table-book, Sum-book, and Spelling-book will no longer hold the high position they have so long held in our English system of education.

F. H.

VII.

THE OPENING OF A NEW HALL IN THE COLLEGE OF PRECEPTORS, LONDON.

INAUGURAL ADDRESS AND DISCUSSION.

(*a*) PRELIMINARY WORDS.

As, in these Appendices, much has been inserted with a view to show the variety of opinions held in this country, by educators and others, in regard to the question of Industrial Education in its many phases; because these topics are still undetermined and, therefore, the various arguments adduced and reasons urged by the disputants on one side and the other, in relation to the very different problems which are, as yet, grouped under the one general head, relate to live questions; so, it has seemed not inappropriate to include one or two similar illustrations of the present attitude of English educators towards like questions.

The high standing of Dr. J. G. Fitch, who is one of "Her Majesty's Principal Examiners of Schools," as a leading authority on educational matters is well understood by American educators. Dr. Fitch was chosen to read the paper upon the subject for discussion, on the occasion of first opening the new hall in the London College of Preceptors. In the scholarly and admirable address then delivered by him upon the life and methods of Socrates, there occurs almost incidentally a reference to Industrial Education, which is taken up in the subsequent discussion, and which is of interest as showing how the subject is looked at by the two classes of contestants; yet, in the end, it is seen that there is a substantial agreement that the combination of both intellectual and manual training is the object to be aimed at.

Many of the ardent advocates of "Manual Training," etc., in this country, have themselves been so thoroughly trained in the old fashion of book learning and feel themselves so wanting in manual and mechanical dexterity, that they appear, in their advocacy of the new, to unduly decry the value of the old; while they occasionally seem inclined to magnify, out of all just proportion, the potency of mere manual training. One of the ablest advocates for the new methods goes so far as to draw a very striking picture of his own school days, affirming that, as for any training in their use, he might just as well have been without hands, except as they were useful to hold a book![*]

To those familiar with his life history, his great practical executive ability, or to those even who knew nothing of the author beyond the very address in which this pathetic plaint of early educational deprivation is uttered; he has proved too much. The strength and vigor of this very argument furnishes the best proof of the excellence of the training of his youth, and shows how possible it is for one to have taken a great part in aiding the world's progress without having had this vaunted training of the hands!

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[*] See extracts from General Francis A. Walker's Address on "Industrial Education in Public Schools," Art and Industry Report, Part II, Appendix L, Paper III (c).

The great need of some forms of direct manual training in the public schools, the admitted value of scientific technical training for specialists, should not be allowed to obscure the greater importance of the general culture of the mind, nor the truth that now, as ever, the need of the State for noble men and women, is even greater than the need for trained mechanics. Never was the need of broad general training so absolutely essential to the welfare of the community as in this day of ever-growing specialties. Our modern man seems rapidly tending towards a condition of Intellectual Myopia.

It is because this Report is devoted to urging the importance of Education in Industrial Art, and especially because this volume is so largely given to showing the desirableness of definite training in the elements of industries; that there arises greater occasion for emphasizing the importance of never losing sight of the higher needs of man, and of developing the intellectual and moral faculties. It is for these reasons that I have not confined my quotations from Mr. Fitch's paper simply to his references to technical training; but have ventured to include his striking picture of the life and surroundings of the citizens of Athens, and his endorsement of the estimate Socrates placed upon the right use of words, as being of quite as much concern to mankind as the right use of tools. A truth which, as I have noted, seems just now in danger of being overlooked.

(*b.*) *COLLEGE OF PRECEPTORS.**

Evening Meeting, *April 20th*, 1887.

The Chair having been taken by Rev. Canon Daniel, a Paper was read by J. G. Fitch, Esq., M. A., LL. D., on

Socrates and His Method of Teaching.

It seems to me to be a significant circumstance, and one of good omen for the future of the College of Preceptors, that the subject selected by your Council for the first discussion in this new hall—a hall dedicated to the investigation of the science and philosophy of Education—should be the life and work of Socrates. His name is identified with some of the earliest dialectical exercises on record; and the arts of evolving and communicating truth, and of establishing a right relation between learner and teacher, were the arts to which he devoted his chief attention. These, too, are the arts which the members of this College desire to acquire for themselves, and to communicate to others; and in entering, as we may reasonably hope, on a fresh career of honour and usefulness for the teachers of the future, it is well that we should seek to put ourselves in closer relation with the great teachers of the past.

ATHENS THEN THE CHIEF CITY IN THE WORLD.

At the risk of recounting some things which are already very familiar to most of my audience, it may not be unfitting to remind you of one or two facts respecting the condition of Athens in the fourth and fifth centuries before Christ. The state, of which it formed the capital, was little larger than a moderate English county, and the whole of its subject territories were not equal in area to Great Britain. In the time of Pericles, however, it was the most influential city in the world. Its outward aspect was, as you know, very remarkable. The houses of the private citizens were, for the most part, plain wooden tenements, in striking contrast to all the buildings associated with the public life of the State; for these were costly and magnificent. Near was a fair harbour, teeming with commercial life; and down the slope, leading to the Piræus, were two sturdy parallel walls, which secured access to the sea in time of war, and which, as they betokened the prudence of the citizens, had also borne witness to their prowess in many a conflict. And towering high above the city, overlooking the common paths and homes of men, stood the sacred citadel, the dwelling of the gods. There was the Parthenon, dedicated to the virgin goddess Athene, whose name the city bore; and near it were the temples of Jupiter, Olympus, of Theseus, and Apollo—buildings splendid even in ruins, but then all fresh and perfect, overlaid with gilding and bright colour. Yet, 2,300 years ago, the stranger who had sailed from Tyre or from Syracuse, to see the city, would not have gathered from all these outward signs of prosperity a true conception of the power of Athens, or have understood why she dominated the world.

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*From "The Educational Times and Journal of the College of Preceptors. May 1st, 1887. London."

IN WHAT THE GREATNESS OF ATHENS CONSISTED.

The greatness of Athens lay in the character of her people, in her freedom, and in the way in which she maintained it, in her mental activity, and in that desire for new knowledge which, long afterwards, so impressed the Apostle Paul when he addressed the people from Mars Hill. She had lately baffled the councils and dispersed the host, of the King of Persia. With the little band of confederated Greek patriots, Athens had resisted an army twenty times the size of her own, and had done it so successfully that no Oriental ruler ever afterwards repeated the experiment. The names of Platæa and Salamis were keenly remembered by the Greeks; the tactics of Marathon and Thermopylæ were often discussed by them. Indeed, every matter of public concern was freely discussed. It is true they had no press, either to furnish them with materials for forming their opinions, or to save them that trouble by presenting them with opinions already formulated. All discussion was oral; not only in the legitimate popular assemblies, but in the market-place, in the forum, and under the porticoes of temples, groups of eager disputants might be seen anxiously investigating some difficult problem in morals or politics. Every act of the governing body, every detail of administration, every judicial decision, became, in turn, the subject of open public disputation. And the Athenians prided themselves on doing everything with their eyes open, and on being able to give a reason, not only for the acts of themselves and their party, but also for all the public policy of their beloved States. A man who had not an opinion on these matters, or who could not defend it, was considered to be a discredit to the community. * * *.

THE DAILY EDUCATION OF AN ATHENIAN.

The sort of mental discipline through which an Athenian citizen passed, differed very much from that with which we are familiar in the nineteenth century. He could not read or write, but he could listen to the harangues of the orator, or join a group of enquirers who surrounded a philosopher pacing the groves of Academus. He saw the plays of Sophocles and Aristophanes, of which representations were often gratuitously provided by rich citizens, as an honourable public duty, and as a contribution to national education. He walked amid the friezes of Phidias and the paintings of Zeuxis; he heard the rhapsodist at the street corner declaiming about the heroism of Hector or the wanderings of the much-enduring Ulysses. "He was a legislator, conversant with high questions of international right and of public revenue; he was a soldier, carefully trained by the State under a severe but generous discipline; he was a judge, compelled often to weigh hostile evidence, and to decide complex questions of right and wrong. These things were themselves an education, well fitted, if not to form exact or profound thinkers, at least to give quickness to the perception, delicacy to the taste, fluency to the expression, and politeness to the manners."

An Athenian knew that his beloved city was dedicated to Athene, the goddess of Wisdom, and he wished to make his city worthy of this distinction. Hence, to many of the people, philosophy was a pastime, and the search after wisdom one of the main duties of life. And, as some men would go to a bath or a gymnasium to brace up their physical energies, others would resort to the rhetor or the sophist to gather strength for intellectual contests, and to practice in the porch or the *agora* the "noble art of self-defence."

And here it may not be unfitting to reflect for a moment on the fact that 23 centuries have not, in this one respect, witnessed the improvement which we may hope has been visible in other departments of instruction. Education in citizenship, training in the art of forming and expressing opinions on matters of high public interest, the discipline which helps a man to explain, and, if needful, to maintain and defend the opinions he is supposed to hold—where is our provision for attaining these objects? Where are the teachers who, not content with making their pupils receivers of truth, help them also to elucidate it, and to enforce it upon others? I think that from Athens we have still, in this one respect, something to learn.

Here followed a graphic picture of the person of Socrates, a man of good lineage and of good repute, who began when about 40 years of age, to go about among the citizens in the Agora, and to join the groups of listeners surrounding the philosophers, and the teachers of Rhetoric, in the groves of Academe; occasionally asking seemingly simple, but, in reality, most searching questions. The characters of Socrates, and of his two disciples, Plato and Xenophon, are described and clearly discriminated; and many illustrative quotations from the conversations are given.

THE "SOCRATIC METHOD."

You observe that Socrates' method of interrogation was often of a humbling and painful kind; it forced home to his collocutor the very unwelcome conviction that he was more ignorant than he supposed. There are three stages in the intellectual history of a man in relation to the knowledge of any subject. The first, and lowest, is unconscious, satisfied ignorance. The next stage is one of ignorance too, but of ignorance unmasked, awakened and ashamed of itself. The third, and highest, is that which follows the possession of clear and reasoned truth. But the second condition is necessary to the last. We cannot vault out of ignorance into wisdom at one bound, we must travel slowly and toilsomely along the intermediate steps; and Socrates thought he did a service to an enquirer if he could only succeed in helping him to reach the second step, and so to be fairly on the right road.

IMPORTANCE GIVEN BY SOCRATES TO ACCURACY IN THE USE OF WORDS.

A very significant feature of his teaching was the great importance he attached to the right and accurate use of words. Many of the dialogues which Plato has recorded for us turn almost wholly on the definition of some word or phrase. Few of us know, until we try, how hard it is to give a concise and perfect definition of even the most familiar word, and how much harder it is to make sure that we always attach precisely the same meaning to it. Now Socrates thought that an examination of these difficulties would be of great use to people generally and to disputants in particular. * * * . And, at the end of this pitiless cross-examination, it would often appear that the respondent, after vain efforts to extricate himself, admitted that he could give no satisfactory answer to the demand which at first had appeared so simple.

AN ACCURATE KNOWLEDGE OF WORDS, AND FAMILIARITY WITH BOOKS, ESSENTIAL TO MODERN SCHOLARSHIP.

And I am sure that we, as teachers, have a special interest in that part of the Socratic teaching which bore upon the exact connotation and the right use of words. Grammar, verbal and logical analysis, rhetoric, style—all these things will still, notwithstanding the occasional satire and remonstrances of the modern professors of science, hold their own as among the chief instruments in the training of a human being for an active and a thoughtful life. And why?—Because, a copious vocabulary is a storehouse of thoughts. Because, whatever we are hereafter to learn, whether about History, Politics, Astronomy or Physics, must, to a large extent, be learned from books; and because whatever gives us greater command of the language of books, and a more exact conception of the significance of that language, enlarges our resources as thinking beings.

THE SOCRATIC METHOD NOT THE BEST FOR USE WITH CHILDREN.

And yet the Socratic method of pursuing a general term into all its hiding places, of amending, expanding, and contracting a definition, until it fitted exactly the qualities of the thing defined, was—though useful as a method of confutation with grave men, especially with superficial pretenders—not a model for us to imitate habitually with children. Occasionally, I have no doubt, it is useful to take a lesson on a single word,—I will say *constitution*, *virtue*, *experience*, *proof*, *law*, *influence*,—trace it through all the stages of its development, and the shades of its meaning; and then ask the scholar himself, after this inductive exercise to define the word, and to take care that the definition shall cover all its legitimate applications. We want, of course, that our scholars shall know the meaning of the words they use. But the meaning of a word as learned by heart from a dictionary or a spelling-book is of no value. It is, indeed, owing to its necessary brevity, often worse than useless. The true way to teach to young learners the significance of a word is after a brief explanation, to tell them to take the word and use it. "Write four or five sentences containing the word." "Give me a short narrative in which this word shall be used three times in different senses." Or "Take these two words, which are apparently synonymous, and employ them in such a way as to show that you see the less obvious distinctions in their meaning." I think that the same object that was aimed at by the Socratic *eleuchus* among grown-up controversialists may be attained, among young scholars, by this simple and less irritating process.

We now come to the quotation relating to technical knowledge. A disciple of Socrates had asked the Oracle at Delphi whether any man was wiser than Socrates, and received a negative answer. "In his defence at the trial, Socrates described the effect of this news on himself." He said:

"Why what enigma is this? For I am not conscious that I am wise, either much or little. What can the god mean by saying that I am the wisest? So I went for myself to one of those who have the reputation of being wise, thinking that there, if anywhere, I should confute the oracle."

He recites his visits to various people; at last, he says:

"But when I went to the artizans, I said to myself, 'Here, indeed, is something in which I am inferior to these men, for they possess some very beautiful knowledge.' And in this I was not deceived, for they knew things which I did not, and, in this respect, were wiser than I. But even the best of these men, because he excelled in the practice of his art, thought himself knowing in most other matters, and this mistake obscured the wisdom he already possessed. So I asked myself, on behalf of the oracle, whether I should prefer to continue as I am, possessing none, either of their special knowledge or of their ignorant estimate of themselves, or to have both as they have. And it seemed to me, on the whole, that I had best continue as I am."

The following suggestive comments by Mr. Fitch are commended to the thoughtful consideration of all who take interest in these topics; especially is this the case in reference to the few words he puts into the mouth of Socrates.

You will see that, on one point much discussed among the educational reformers of our time—the educative virtue of mere handicraft—Socrates would probably not have agreed with the current opinion. He would not have regarded manual training as a good substitute for intellectual discipline. He had seen that certain mechanical dexterities might easily co-exist with complete stagnation of mind, with great poverty of ideas, and with a curious conceit as to the proportion and relative worth of the sort of knowledge the artizan did not happen to possess. I think, if he were to be consulted in our day by the advocates of technical education, he would say,—"Train people's hands and eyes by all means, but train the understanding at the same time. Let your pupil know well the properties of the materials he is using, and the nature and limits of the forces he employs. Let your handwork be made subservient to careful measurement, to the cultivation of taste and intelligence, to the perception of artistic beauty, and then it will play a real part in the development of what is best in the human being; but, unless you do this, you will get little or no true culture out of carpentering, modelling, or needlework."

Nor from those studies which have of late years appropriated the name of Science, did Socrates hope very much.

After this, Mr. Fitch proceeds with instances illustrating the teaching of Socrates; then, considers the theory of a pre-natal existence as put forth by Socrates and Plato, and re-echoed in the famed ode, "On Intimations of Immortality"—by Wordsworth, passages from which are quoted. The immediate story of the trial, condemnation and touching death scene, is briefly told; and the speaker thus concludes:

This is an ancient and a hackneyed story—so ancient and so hackneyed, that I felt a little diffidence in bringing it under the notice of this audience, among whom are some who know it much better than I do. Yet it has not wholly lost its moral significance. Much of the teaching of Socrates is now obsolete. Some of the objects he sought to attain, we have long learned to regard as unattainable; but the difficulties with which he was confronted exist more or less in all ages of the world. He saw around him men who had never harboured doubts simply because they had never examined, who held convictions all the more angrily simply because those convictions had never been verified. The mere associations accidentally connected with the truths men loved, he saw were constantly mistaken for the real living truths themselves. He chose for the objects of his attack opinions without knowledge, acquiescence without insight, words without meaning, and dogmas without proof. And, until these phenomena shall have become wholly extinct in the world, there will always be a place in philosophy for the Socratic dialectics, and an honoured place in history for the life of the philosopher himself."

(c) *DISCUSSION OF THE PAPER.*

"The Chairman said he was sure the meeting would agree with him in thanking Mr. Fitch for his admirable lecture upon Socrates and his method of teaching. The lecturer stated that the subject was too ancient and too hackneyed to bring before a modern audience, but no subject could be so described if treated in the way in which the lecturer had handled it; and one effect that it would have upon the audience would be to send them back with renewed interest to the perusal of the Platonic dialogues. Many would remember their first introduction to those dialogues and the great interest with which they perused them; and some might, perhaps, also remember how at last they had closed the volume with the feeling that, after all, these dialogues were eminently of an artificial character. He remembered sympathizing with De Quincy when he somewhat audaciously said: "I wish I had been able to have a turn with Socrates." For you will remember that many of the characters who formed the interlocutors with Socrates are men of straw; they are put up for the express purpose of being knocked down, and one cannot help feeling a certain amount of unfairness in the treatment of the subject which represents all the truth on the side of Socrates, and all the errors and confusion of thought on the side of those who conversed with him.

IMPORTANCE OF A CORRECT COMPREHENSION BY THE PUPILS OF THE WORDS USED BY THE TEACHER.

The lecturer had shown, however, that there was a great deal to be learnt from these dialogues, and the first point to which he had called attention was that Socrates insisted upon finding out what ideas underlay the words employed by his interlocutors. That was one of the first things which teachers had to do. There was nothing which so frequently led pupils and teachers astray as the improper use of words. Teachers might go on teaching boys for half an hour, explaining and re-explaining, and find out after all that their efforts had been thrown away owing to the fact that some of the words which they had used from the beginning to the end of the lesson had never been properly understood. It was assumed that pupils were as familiar with the meaning of the words as the teachers, and it constantly happened that the words were most familiar as sounds to children were the most obscure as regards the ideas which the words conveyed. Another point to which the lecturer had called attention was the great service Socrates rendered by making people aware of the extent of their knowledge, and the extent of their ignorance. He remembered Mr. Gladstone, many years ago, speaking of a peculiar kind of ignorance which he designated by the name of "compound ignorance"—that condition in which a man was when he was not only ignorant, but was ignorant that he was ignorant. That was a state of mind in which teachers often found their pupils, and before new truths could be imparted to them it was necessary that their minds should be disabused of old errors. In inviting discussion, he suggested that the speakers should deal specially with the following question: What are the subjects to which the Socratic methods are applicable in modern education?

DR. WORMELL SPEAKS FOR TECHNICAL EDUCATION.

Dr. Wormell said he responded to the appeal of the Chairman, although he was not quite in a suitable mood for opening the discussion. The subject of the lecture and the voice of the lecturer had awakened memories of eight-and-twenty years ago, and had renewed the feeling, as well as the pleasure, with which he had then listened daily to similar teaching from the same teacher. He wondered whether such teaching was still to be heard in the Training Colleges, or whether the withering influence of recent codes had completely replaced it by the driest routine. He regarded it as another good omen for the future of their College, that it had secured for the first lecture in the New Hall one so high in tone and so graceful, indeed, he might say fascinating, in form.

He ventured, however, to cross foils with Mr. Fitch with regard to his reference to Technical Education. Whoever, amongst practical educators, thought of "substituting manual training for intellectual education?" He thought no one. As regards the lower schools, there was reason to think the present methods tended to produce a love of a sedentary occupation and a distaste for handicrafts. The advocates of technical education wished to remedy this by int oducing into the system what would not only counteract this tendency, but would provide a useful form of relaxation, and would strengthen the intellectual powers and give them a practical turn. This they wished to do without in the slightest degree lowering the intellectual education at present attainable. Mr. Fitch has proved that Socrates was an advocate of technical education; for the first dialogue he had read, in which a would-be politician was told to visit the mines which brought the country's revenue, and the fortifications which served for its defence, was an excellent illustration of the main tenets of the Technical Educator."

Interesting comments on various parts of the paper were made by several speakers. When all had finished Mr. Fitch then ended the discussion by the following remarks:

MR. FITCH DISCRIMINATES BETWEEN TWO KINDS OF TECHNICAL EDUCATION.

"Mr. Fitch, in reply, said he was afraid he had been unfortunate in not sufficiently conveying his meaning upon technical education. There were people in the world who used the phrase technical education to mean mere manual instruction as a substitute for book work, and not as an instrument of general development. Against that he had the strongest objection, and that was the objection he had sought to set forth in the few words he had uttered upon the matter.

"He did not object to technical education, in its true sense; the right development of the hand and eye and of the bodily powers was an essential part of education; but if you discredit intellectual work, and say, as was sometimes said, that a very large part of the time now spent in intellectual work ought to be spent in carpentering, modelling, or cutting papers into patterns, then all he had to say was that he believed that would be an entirely retrograde step, unless intellectual exercise of some kind was associated with it.

"A good deal had been said about the applications of the Socratic method, and it had been hinted that probably the meeting would have been usefully employed if he had tried to fix the kind of subjects and lessons to which the Socratic method was particularly applicable. No doubt that might have been extremely useful, but it would have occupied an entire evening, and would have been incompatible with the somewhat humbler scheme which he had laid down for that evening's paper. He had merely sought to lay before them some facts in the life and character of Socrates, rather than to call attention to the applications of his particular method. If Socrates were living now, and heard them talking, his first question would be, What do you mean by the Socratic method? There would be a very great difficulty in answering such a question. He had desired this evening to accentuate two or three fundamental principles which underlay all true methods, and which, when understood, would enable them to devise plans of instruction as applicable to the pupils of the present time as the Socratic method was applicable to the pupil in the time of Socrates. In conclusion he expressed his pleasure at delivering the first lecture in the new building, and he believed that there was a great future of public usefulness before the College of Preceptors.

"A vote of thanks to the lecturer was then passed by acclamation."

VIII.

EDUCATIONAL FREEDOM.

The following eloquent passages, emphasizing the importance that the individual characteristics of the pupil should not be ignored and suppressed through the machinery of the school,—a very real danger and one which, in the opinion of many, is ever menacing in our American public schools,—are from a paper read by Dr. Wormell, M. A., before the London College of Preceptors at a meeting held June 22nd, 1887, which was published in The Educational Times of July 1st, 1887.

The Title of this long and able paper was "Educational Progress during the half century, from a Teacher's Point of View."

The closing passage of the address is quoted for its noble portraiture of the enduring labor and high reward of the true teacher.

A very few years is sufficient to produce great changes in opinion on matters of education. I could name a period of less than twenty years, at the commencement of which nobility, learning, and orthodoxy declared the majority of the human race ought never to read and write; while, at its termination, all three were employed in building schools for the humblest of mankind. Are we not, then, to keep a keen eye upon probable changes? and does it not concern us and all public teachers, to be fit to face future, as well as present, opinion?

DANGER OF DEVELOPING A MONOTONY OF MEDIOCRITY.

1. We need not fear that the desire for education, which has now been fairly aroused, will subside: but there is danger in the tendency to require all men to pass through the same mould and the same gauge. If we may trust what we hear and what we read, this danger has taken deep root in the public elementary schools. There, we are told, Procrustes will have his victims. He is the government, and the teachers are his henchmen. His victims are the dunces on the one hand, who are stretched beyond their powers, and the geniuses on the other hand, who are stunted to an average capacity. We should have thought it a libel on teachers, and contrary to the spirit of justice, impartiality, and fidelity, which is an essential characteristic of a good teacher everywhere, to hint that they, as a body, had made their compact with the irrational robber, if they did not persist in telling us so. We should have thought that they would have rebelled against authority if it ordered such a compact. Rebellion is usually sanctified by success and damned by failure, but this rebellion would have been a righteous struggle in any case.

A TRUE EDUCATION WOULD SO ADAPT TRAINING AS TO DEVELOP EXISTING GERMS OF INDIVIDUAL EXCELLENCE.

We should rather have expected that teachers would err on the side of Mr. Ruskin, who tells us that—

"True justice consists mainly in granting to every human being due aid in the development of such faculties as it possesses for action and enjoyment * * * 'Due' aid * * * not 'equal' aid * * * In education * * * true justice is curiously unequal * * * The right law of it is that you are to take most pains with the best material * * * Never waste pains on bad ground: let it remain rough, though properly looked after and cared for it will be of best service so; but spare no labour on the good, or what has in it the capacity of good. The tendency of modern help and care is quite morbidly and madly in reverse of this great principle. Benevolent persons are always by preference busy on the essentially bad; and exhaust themselves in efforts to get maximum intellect from cretins, and maximum virtue from criminals. Meantime they take no care to ascertain * * * the continuous sources of cretinism and crime, and suffer the most splendid material in child-nature to wander neglected, until it has become rotten to the degree in which they feel prompted to take an interest in it." * * *.

The kind of liberty we have now to contend for seems to be the liberty of free growth to the gifts of intelligence and power. It is a new phase of that liberty for which Cranmer contended when he said —

"To exclude the ploughman's son and the poor man's son from the benefits of learning, as though they were unworthy to have the gifts of the Holy Ghost bestowed upon them as well as upon others, is as much as to say that Almighty God should not be at liberty to bestow His great gifts of grace upon any person, nor nowhere else, but as we and other men shall appoint them to be employed, according to our fancy, and not according to His most godly will and pleasure, who giveth His gifts, both of learning and other perfections in all sciences, into all kinds and states of people indifferently."

The modern notion is, that the Almighty may bestow His gifts to the extent of the seven standards of a legal code, but no further. That what we may call the liberty of capacity may be as perfect as possible, we must have schools of various types in each grade, as well as of various grades. To quote again from the "Stones of Venice:"—

"One man is made of agate, another of oak; one of slate, another of clay. The education of the first is polishing; of the second, seasoning; of the third, rending; of the fourth, moulding. It is no use to season the agate; it is vain to try to polish slate; but both are fitted by the qualities they possess for service in which they are honoured."

2. There is some little danger, perhaps, that demands which it was necessary to urge at one time may be overstrained. Hints have lately been given that the movement for Technical Education in the lower schools may be carried too far. But, indeed, it has not yet gone far enough. The system of education in many places produces but very weak machines, fit only to be puny clerks, who have a distaste, or even an abhorrence, of healthful labour. To correct this defect is the aim of the advocates of Technical Education. * * *.

There is hope for the future of the Educator. His labours will be better appreciated, his difficulties better understood, and his office will be more respected. This should encourage those who are now qualifying themselves by general and professional studies, to take up the work heartily and hopefully. * * *. We rejoice at the great progress which has been made, because the teachers who will follow us will have opportunities which were never within our reach. But there is a hope, a prospect, an expectation which the teachers of the next generation and the teachers of this have in common, and I venture to suggest a picture of this in the case of an ideal teacher, for the encouragement and consolation of those who feel that our labours are arduous and responsibilities great.

THE REWARD OF THE TRUE TEACHER.

There will come a day for each in which he shall relinquish his work, and the school-room shall know him no more. Under these circumstances, imagine one who has been throughout faithful to his calling; how pleasant then to him will be the retrospect! He will leave behind him many of a generation whose characters, by his hand, will have been moulded to intelligence and virtue. The departed Poet has made men dance to his lyre; the deceased Philosopher has gathered round him an admiring and chosen few; the Statesman may have made a nation his debtors—but the zealous and faithful Teacher will have taught many to walk in the true light, and will have excited an everlasting appetite for truth. He will have left impressions on character more enduring than breathing marble. Some quiet grave may receive his ashes, but grateful hearts will embalm his memory, and living men memorialize his work. He will rest from his labours in the affections of his former pupils, and in their thoughts of childhood's days. And in the still more distant future, when the silence of the grave shall be passed, shall he not see uprisen, as a valley of golden corn full in ear, the fruits of his labours, in the bliss and the intelligence of immortal minds?"

IX.

A CONFERENCE ON TECHNICAL INSTRUCTION.

HELD IN LONDON BY EDUCATORS AND PRACTICAL ARTISANS.

(*a.*) PRELIMINARY WORDS.

The following report of this interesting conference, taken from the London Times of November 8, 1887, is here inserted by reason of the admirable summary, contained in the address by Professor Thompson, President of the Finsbury Technical College, who is a recognized authority on Technical Education; both of the institutions for Technical Training which have been recently founded and of the present educational movement in England for promoting the spread of all grades of technical instruction among the people generally; for it will be seen from the Professor's statements that this movement includes, not only the establishment of the highest class of Technological and Engineering Schools; but provides, also, for the needs of youth who propose to become apprentices, and for those who can only attend night classes.

Professor Thompson's recital of the like activity in providing opportunities for technical training which every where prevails on the Continent, is impressive to American readers. All that has been done towards establishing institutions of higher technical training in the United States—with its population of sixty millions, mostly workers—seems insignificant, in comparison with the provisions made by these different European countries. It is, however, conceded by the most competent judges, that the few high Institutions of Technology which exist in this country hold equal rank with the best European schools. It is when these are considered as affording the only home opportunities for obtaining the best advanced training in Science, and in Engineering, that, as contrasted with the provisions thought necessary in other countries, it is seen how inadequate is the provision for high scientific education in America. Nor, do the several Mechanics Institutes, night schools, and like makeshifts for supplementing the work of the public schools, which are recorded in the succeeding volume of this Report, hold a much larger proportion to the population.

It is only by the activity of the present movement for the general introduction of elementary industrial training in all public schools throughout the United States, that any evidence is shown that the people of this country are awakened to a realization of the most pressing educational demands of the present day. If elementary training in the Arts and Sciences related to industries, can be thus made general, the subsequent increase of institutions giving opportunities for advanced training in these Arts and Sciences, may be confidently predicted; for, just as classical Academies, High Schools, and private fitting schools, are the indispensable feeders of the classical colleges and universities; so, elementary and secondary schools of science must be made generally accessible, before any great development of scientific institutions of equal rank with the existing classical colleges and universities, becomes possible.

When the elementary instruction in these preliminary studies is given in all the lower grades of the public schools, and such direct preparation for the Colleges of Science is given in the public High Schools, as is now given to those pupils desiring to enter the Classical Colleges, then the Higher Institutions of Superior Instruction in these studies will not be found wanting. The progressive advance of the older colleges in affording increasing facilities for the study of the Sciences, and for Mechanical as well as Mining Engineering, affords ample proof that any real demand for Schools and Institutions affording the highest scientific education will be met.

Those, then, who desire to see the Institutions for the most advanced studies in Science established and multiplied in the United States, are the very persons who should most urgently promote the movement for the general introduction of this elementary industrial training throughout the public schools of the country.

It will be noticed that, in the discussion which followed this address, one of the speakers points to the relatively large sums expended for education in the United States as contrasted with the amount spent for soldiers, and reads England a lesson thereon; of course, the diverse conditions of the two countries readily accounts for this difference, since the Government of Great Britain, through her world-embracing colonies, is every where exposed to the attacks of hostile countries; while, thanks to the patriotism which preserved their Union with Freedom, the United States, whether the Nation is considered, or any one of the individual States composing it, has no external enemies to fear; and fortunately, owing to the form of popular, elective, representative, constitutional government which prevails, neither the Nation or the States are compelled, as is the case in some countries, to support a large standing army as a guard against internal dissensions. All this is apparent to the most careless observer.

It may not, however, be so generally realized that, for the past quarter of a century, and for a long time yet to come, the people of these United States have paid, and must continue to pay, a war tax; not wholly insignificant even when compared with that of the most war ridden of European Governments!

If the sum of the principal and interest of the war debt paid off during the past twenty-five years, the similar amount of the present bonded debt of the United States, both almost wholly the result of the war of 1861–5, and the immense annual payment of soldiers' pensions which must continue for years to come, are all computed; it will appear that the present generation of citizens of the United States have had no such immunity from the burdens of war, as is inferred when nothing is taken into account beyond the present annual expenditure for the small naval and military force supported by the United States in time of peace.

That this great war debt has been so rapidly paid off simultaneously with the growing prosperity of the people as evidenced by the wonderful development of internal improvements, furnishes the most emphatic endorsement of the soundness of the American policy, and of the wealth producing capabilities of the American people.

The criticisms by Professor Thompson of the South Kensington methods, and his desire for the creation of a comprehensive Educational Department under a responsible Minister, in place of the present "Lords of Council," are of interest as affording an inside glimpse of the opinions of English educators concerning their own Educational Governmental System.

The views of the English workers as shown during the discussions, are of interest as revealing the practical conditions caused by the prevailing demand for cheapness; regardless of thorough workmanship, or the real value of the article produced. A demand, which means the destruction of good work, the decadence of good workers, and universal wastefulness, wherever it prevails; against which, all the educational forces of the world must be arrayed if the civilization of the future is to be of any value.

It will be noted as significant, in view of the suggestions advanced, that Professor Thompson, in closing the discussion, reiterates his confidence in the worth to the workmen of thorough technical training.

It is, also, extremely interesting to see how, as Professor Thomson relates in his account of the new Institutions, the "Guilds" of Trades, in London, and elsewhere in England, which date from the Middle Ages, and have long seemed to possess only historic interest and a traditional vitality, have suddenly burgeoned into life; and have become active participants in the conflict which the champions of civilization to-day are waging against the dragons of ignorance and poverty.

For generations, these ancient "Guilds" have seemed as useless and archeological as the old suits of armor in the Tower of London; but now, as if waked to life by the touch of some enchanter's wand, they appear in the van of the conflict; leaders and champions of the educational and civilizing forces of the present era.

THE PRESENT POSITION OF THE TECHNICAL INSTRUCTION QUESTION.

(*b.*) A PAPER BY PROFESSOR THOMPSON READ BEFORE THE CONFERENCE ON TECHNICAL EDUCATION.

A conference on Technical Instruction, in which working men took a prominent part, was held on Saturday evening, at the Finsbury Technical College, Leonard-street, Finsbury, and an address was read by Professor Silvanus P. Thompson, Principal of the College, on "The Present Position of the Technical Instruction Question." Mr. James Rowlands, M. P., occupied the chair, and there was a large attendance of students and others, interested in the progress of the College.

The College was founded and is maintained by the City and Guilds of London Institute, and the foundation stone of the present buildings was laid by the late Duke of Albany in 1881.

Professor Thompson, before reading his paper, stated that he was solely responsible for calling the conference, and briefly referred to the legislative efforts for the improvement of technical training. Before the question was dealt with by Parliament, it was desirable that the views of those most capable of offering fruitful suggestions should be made known. With respect to that college he was amazed at the comprehensive foresight displayed by Sir Philip Magnus, in sketching the outlines of their work, in his address at the opening of the college, and the plan then laid down had been followed in almost every detail. In the course of his paper, the reading of which was frequently cheered, Professor Thompson said: During the ten past years we have seen the establishment and the successful development of many real technical schools in the provincial towns of England—in Leeds, Bradford, Huddersfield, Keighley, Oldham, Manchester, and Macclesfield. In many instances, notably in the case of the various technical schools for the textile industries, the greatest assistance has been rendered by one or other of the ancient Guilds of London; notably, the Clothworkers' Company, who are spending £14,000 or £15,000 a year in some of the provincial towns, and also the Drapers' Company have come forward to promote these most admirable institutions and to encourage local efforts by large pecuniary contributions. After referring to the generous work of the Merchant Vintners' Company at Bristol, and to the classes established at King's and University Colleges, the Crystal Palace School of Engineering, the Hanover-Square School of Electrical Engineering, the Bow and Bromley Institute, the Aldenham Institute in the St. Pancras-road, the Young Men's Christian Polytechnic Institution in Regent-street, and the People's Palace.

COMPREHENSIVE PLANS OF THE CITY AND GUILDS OF LONDON.

Professor Thompson came to the group of agencies now established by the City and Guilds of London Institute for Technical Education. He said:—The Institute has founded three Technical Colleges—viz. (a) The Central Institution, in Exhibition-road; (b) the Finsbury Technical College, in Leonard-street, City-road; (c) the South London Technical Art School, in Kennington park-road.

The Central Institution, opened in 1885, is a sort of Technical University designed to give to London a college that shall be a centre for the highest kinds of technical education; for the training of teachers for technical classes, and for giving to those who have already served their time in one or other of the scientific industries or manufactures, that higher training which will enable them to become managers, superintendents, or principals of manufacturing works. The instruction includes engineering, civil and mechanical, chemistry, physics, mechanics, mathematics, drawing, manufacturing technology, workshop practice, and modern languages. The cost of erecting and equipping the institution has been about £96,000; and a sum of £10,000 per annum is allotted for its maintenance. The Finsbury Technical College began with the classes in applied chemistry and applied physics established in the adjacent Cowper-street Schools in 1879. The real work of the college began in 1883 with the opening of the present building in Leonard-street, when the scheme of instruction of the day classes was first elaborated. The college building cost about £35,000; the grant for annual maintenance from the City and Guilds of London Institute is £6,000 per annum; and the income from students' fees is about £1,700 per annum.

THE TWO PROVINCES OCCUPIED BY THE FINSBURY TECHNICAL COLLEGE.

The operations of the Finsbury Technical College consist of two entirely distinct portions—the day classes and the evening classes. The day classes are attended by 155 young men, whom I may describe as young engineers, mostly between the ages of 15 and 17, who have all passed an entrance examination and are making systematic study the business of their lives for two years or in some cases three years; not as apprentices, but to fit them to become apprentices and to enable them to shorten the period of their apprenticeship. They mostly come direct from school—a few from public elementary schools, but most of them from middle class schools. The fee for each year is £9.

THE DEPARTMENTS OF THE COLLEGE.

The college has three departments—(1) mechanical engineering and applied mathematics; (2) electrical engineering and applied physics; (3) industrial and technical chemistry. A fourth department, that of applied art, and a fifth, for the building trades, remain to be added when space and funds permit. The work of the college is self-contained, as the college does not prepare students for any external examinations. The course of instruction in the day classes is intended to prepare youths for entering the factory or workshop, there to complete a modified sort of apprenticeship. It takes them as they leave school and fits them to enter on the practical work of their life, with aptitudes already in part methodically acquired, and having a grip on the scientific principles underlying their future work of a kind that no amount of book-learning or theoretical study could impart. It is this first wasted two years out of their apprenticeship that is gained by being spent at the Technical College, where they can learn to work well and carefully, with full explanation of principles and with illustrative appliances for facilitating learning such as no factory or workshop would possess.

THE AIM OF THE COLLEGE.

The aim of the college is to prepare its students to become eventually foremen or managers, because it fits them to become good and intelligent workmen when they pass from it to their places in the factory or the works. They pick up in the shops in two or three years more than they would have done in five or six years, under the old apprenticeship system. In many cases they enter at once as improvers, earning from the first, wages varying from 5*s*. to 25*s*. per week. Many of them can at once earn their salt in the works, laboratory, or drawing office. Their college training stands them in better stead than an expensive premium, because it fits them to enter, not as premium pupils, but rather as workmen, and they can gain the confidence of older workmen as premium pupils very rarely can do. The evening classes of the Technical College during the past session were attended by 912 students, the vast majority of them being occupied during the day in industrial employments. Though there are some not much over 14 years of age, the average age is considerably higher than that of the day students, and their previous attainments are very varied. Of the 912 students, 265 entered as apprentices at half fees. There are no entrance examinations to restrict admission to the classes; and there is nothing to prevent students who cannot give as many as three, four, and five evenings a week from attending some single class on one night a week. No trades are taught in the college, the nearest approach to trade-teaching being the practical instruction given in the plumbing and metal plate classes. Down to the present date classes have been organized giving technical and scientific instruction for the following trades:—Cabinet-maker's work, carpentry and joinery, metal plate work, plumbers' work, brick laying, and brick cutting, brick work and masonry, and builders' quantities. The following topics have been taken up in this way during the past three winters:—In the department of mechanical engineering, gas engines, steam boilers, and the indicator diagram; in the department of electrical engineering and applied physics, optical instruments, electric bells, solders and fluxes, electro-plating; in the department of technical chemistry, gas manufacture, coal tar products, soap and alkali manufacture. The special topics for the current winter are electric bells, photographic chemistry, and the design and manufacture of dynamo-electric machines and electric motors.

INSTRUCTIONS GIVEN BY ARTIZANS NOT PEDAGOGUES.

In conclusion three points may be emphasized: Firstly, all the instructors of the Finsbury Technical College are men who have learnt their work from the industrial side, and who can therefore show how theory can be applied in practice; they are trained workers, endeavoring to teach the principles of their craft, not school masters trying to teach trades. Secondly, the main work of the college is conducted, not in the lecture-room or class-room, but in the laboratories, workshops, drawing offices, and studios. Thirdly, there is no cramming for examinations, therefore none of the baneful effects of striving after payment by results; no inducement to superficialism or dilettantism; in a word, students and instructors alike come to the college not for amusement, but for work.

In the South London Technical Art School, which cost £2,200 to erect, and has a maintenance of £1,650, the following subjects are taught:—Drawing, design, modelling, wood engraving, china painting, house decoration, upholstery cutting, and art metal work in iron and brass. The number of students in attendance last session was 187.

Turning to Scotland, we find that the technical education movement is progressing, as may be seen from the reorganization in Edinburgh of an old endowed school as a technical school, and from the consolidation at Glasgow into the West of Scotland Technical College of three excellent institutions previously separate—the Anderson's College, the College of Science and Art, and the Allan Glen's Institution. Unhappily for the cause of technical education in Scotland, a so-called Technical Instruction Act was last year hurried through Parliament without due consideration. The effect of this Act is to declare that technical instruction consists of instruction in the subjects prescribed by the Science and Art Department at South Kensington, virtually abolishing all local powers to determine what subjects and what kind of teaching are appropriate to the needs of the locality.

TECHNICAL EDUCATION ON THE CONTINENT OF EUROPE.

If we look abroad to the efforts made on the Continent to promote technical instruction, we may well be amazed. In every country—France, Sweden, Russia, Italy, Belgium, Austria, Switzerland, and Denmark—but above all in Germany, the most extraordinary sacrifices are being made to promote the technical as well as the scientific training of the rising generations. The reports of the Royal Commissioners of Technical Education bristle with statistical facts that cannot be gainsaid. The elaborate volume recently published by Mr. E. C. Robins gives some idea of the magnitude and number of the buildings erected during recent years in Continental towns.

HOW SHALL TECHNICAL EDUCATION BE ORGANIZED IN GREAT BRITAIN?

But the immediate question before us is, What is the best form to give to the national organization of technical instruction? At present there appear to be three claimants to the honour of directing the future organization.

1. The City and Guilds of London Institute, who have a claim by virtue of being, as it were, in possession of the field, by virtue of the large sums which they have expended upon the promotion of technical instruction, and by virtue of the fact that they have already, in their scheme of technological examinations, the germs of a national organization. But the maintenance of the work it has undertaken will soon overtax its present means.
2. The National Society for the Promotion of Technical Education, a body recently formed under the presidency of the Right Hon. the Marquis of Hartington. The claims of this body cannot be based upon anything that it has yet done, or upon the intimate knowledge of the subject possessed by its members, who are mostly eminent politicians. It is, nevertheless, a very powerful body, and its appearance upon the scene at this juncture should be considered as an important factor.
3. The Department of Science and Art, situated at South Kensington. A powerful bid for the future management of technical instruction was made by the Department of Science and Art during the last Session of Parliament in the introduction of the abandoned Technical Instruction Bill. To understand aright the real importance of this move a little knowledge of the operations of the Science and Art Department is requisite.

SOUTH KENSINGTON METHODS CRITICISED.

It is notorious to all who have had anything to do with the South Kensington organization, whether as students or teachers, how completely stereotyped are all the methods and ideas of that Department. Their training in art appears to be based upon the assumption that all originality must be ground out of the student by putting all students through the same mill. In science their assumption appears to be that any man who has passed an examination in a subject is fit to teach that subject; and that every graduate of an English University is fit to teach every subject in the whole round of the sciences. What, then, must be done for the national organization of technical instruction?

A NEW EDUCATION DEPARTMENT PROPOSED.

The first and most important point of all is to secure the creation of a real Education Department under a real Minister of Education. At present we have no Minister of Education, only a Vice-President of Council, whose duties appear to be extensive and peculiar. They comprise apparently the work of looking after the regulations for statute fairs and diseases of cattle, of supervising the Elementary Education Department and the Science and Art Department, and of superintending the proceedings of the Judicial Committee of the Privy Council. What is wanted is a real Minister of Education, presiding over an organization in which the Elementary Education Department, the Science and Art Department, and the Departments of Secondary, including technical, and Higher Education should all take their appropriate places under officials responsible directly to the Minister himself, and not to that mysterious body "My Lords of Council." No attempt by Parliament to organize technical instruction can be satisfactory unless it involves the appointment of a responsible Minister of Education and a reconstruction of the whole departmental machinery.

(c.) *THE PAPER DISCUSSED.*

In the discussion which followed, the Rev. H. SOLLY pressed the importance of an organized system of apprenticeship by which good technical training should be afforded to all the apprentices.

Mr. MORGAN, a working cabinet-maker, expressed his general agreement with the professor's remarks, from which he had learnt much. It was one of the standing disgraces of the democracy of this country that so little was spent in technical training. In his own industry, unhappily, slipshod work paid better than honest and thorough labour. In Tottenham-court-road and elsewhere this cheap system was the only one which met any acceptance. In this country we spent twice as much on war as on education, whereas in America they spent nine millions on war and eighteen millions on education.

Mr. **RICHARDSON** (boot trade) said, unfortunately the Bill which Professor Thompson rightly denounced was not scotched, but was to be reintroduced next Session. In addition to its other defects, the Bill was only permissive, and its application might be prevented or delayed by 50 dissentient rate payers. It would be better to wait three or four years for a good Bill than to accept the miserable attempt of last Session. (Hear, hear.)

Mr. **LUCRAFT**, of the London School Board, wanted to know how the children of working men were to get technical education. It would be much better that the scholarships now given for literary attainments should be transferred to technical schools. (Cheers.) In the cabinet-making trade, with which he was familiar, all the best work of the present day was but an imitation and reproduction of that of the last century. (Hear, hear.)

Mr. **PETTIFER**, amid laughter, said it was a pity that a college where building was taught should be one of the worst ventilated buildings he had ever been in. Unfortunately, the competition we were suffering from was not the competition of superior but of cheaper articles. How, then, would technical education help us? Take the watch trade—their chairman's trade, he believed. No better watch could be bought than the Clerkenwell lever. Yet it was beaten by watches the workmanship of which would be a disgrace to an old roasting jack. (Laughter.) In the same way Sheffield knives were beaten out of the market by articles made in Switzerland and elsewhere which would do any mortal thing but cut. (Laughter.) That was a question which he should like the chairman to solve.

Mr. **AYTON** (carpenter) doubted the utility of the proposed scholarships, Many of the most successful men had learnt their trades without apprenticeship—*e. g.*, Cubitts, the builders, never had any apprentices. He advocated a limitation of the number of learners of each trade. (Hear, hear.)

Mr. **PARNELL** (cabinet-maker) thought a revolution of public taste in favour of good instead of flashy work was necessary before technical education could do much good. The danger was that we should have an overcrowded market of foremen and managers from technical schools. He knew many first-rate mechanics who could not earn their living simply because they were first-rate. (Hear, hear.) In speaking thus he by no means undervalued technical teaching in itself.

Mr. **WHITTY** (cabinet-maker) said in this part of London there were hundreds of boys and men learning to make one article only—*e. g.*, a hall stand or towel rail. (Hear hear.) Such men were at the employer's mercy, and were crushed down because they had had no technical education. As a trade unionist he thought that none but practical workmen should teach trades in technical schools. (Hear, hear.) In Ireland, in this respect, they were somewhat ahead of Great Britain.

The **CHAIRMAN** spoke with admiration of the industrial school at Galway taught by the Christian Brothers.

Mr. **PYE** (gold-beater), of the London Trades Council, said that institutions like that college had the hearty support of the trade unions. But he was in favour of confining the advantage of such special training to *bona fide* workmen in order to lessen competition. In the cabinet trade skilled men were actually only getting 10*s.* for a week of 60 hours.

Mr. **OWEN ROBERTS**, clerk of the Cloth-workers' Company, in reply to Mr. Lucraft, said that the Clothworkers had last Monday come to the determination of turning all their literary scholarships into technical scholarships. (Cheers.) As to the limitation of apprentices, he would remind his hearers of Lord Derby's recent reminder that we had the great Malthusian question upon us.

Professor **THOMPSON**, in reply, said that technical education gave the short cut, and in that way cheapened work, as well as made it better. Geometry, for example, was practically applied, and not taught as it was at Cambridge. Then time was saved by machinery, and it was by machine competition rather than by foreign competition that the watch trade of Clerkenwell had been injured. As to the cutlery competition, he was afraid no technical education would do away with the fact that there was an enormous number of fools in every country. (Laughter.) Technical education would tend to improve taste, though he never pretended that it was a panacea for all the evils from which we were suffering. The taste for inferior furniture had developed in consequence of the depression of the last ten years. The pendulum would spring back, and with renewed prosperity the demand for good work would revive. (Hear, hear.) The foreign workmen were beating ours because they were better taught; and if the Finsbury College turned out good foremen they would protect British workmen. Sixty or 70 per cent. of our coal tar products were actually sent abroad in order to be converted into dyes for the use of our Lancashire and Yorkshire manufacturers. In furniture it was said the West-end beat the East-end in style. There was no reason why it should be so, and they had a treasure in Mr. Brophy, whom they had captured, and who designed a great deal of the best furniture made in the West-end. (Hear, hear.) In conclusion he moved a vote of thanks to the chairman which was seconded by Mr. Robins, heartily given, and briefly acknowledged by Mr. Rowlands.

The conference, which had occupied three hours, was then brought to a conclusion, and many of the visitors examined the workshops and apparatus of the college.

X.

A NOTABLE DISCUSSION CONCERNING TECHNICAL EDUCATION.

HELD IN THE PAGES OF "THE NINETEENTH CENTURY" DURING THE YEAR 1888.

INTRODUCTION.

The following extracts are from papers recently published in "The Nineteenth Century" which comprise a notable contribution to the contemporary discussion of the proposed new methods of education, in which the distinguished contestants present several phases of the subject in a most interesting and suggestive manner. Incidentally the topic of the pernicious influence resulting from the adoption of Civil Service Examinations in Great Britain, is introduced; and the significent change in the attitude of English Educators and Statesmen, towards this long boasted catholicon for all governmental ills, is strikingly shown. This appendix will, it is believed, be found of exceptional interest to all concerned in the solution of the problems herein discussed.

LORD ARMSTRONG ON TECHNICAL EDUCATION.

The conclusions of one who has been successful in carving for himself a distinguished place in any profession or occupation, upon any topic in regard to which his avocation has afforded peculiar opportunities for observation, are always of interest.

It is this which lends special interest to an article in a recent number of an English Review;—the "Nineteeth Century,"(July, 1888.),—by Lord Armstrong, upon whom the Peerage is supposed to have been conferred in recognition of his distinguished services to his country as a great Mechanical Engineer, Inventor, and Manufacturer; as, in short, the English compeer of the German Krupp.

In the very title given his paper,—"The Vague Cry for Technical Education,"— Lord Armstrong happily outlines the situation. Vague indeed, it commonly is, in this country as well as in Great Britain. Yet in this very vagueness, this blind groping for some remedy, there is shown an almost pathetic consciousness of a general and pressing need. The popular instinct reaching out for something, it knows not definitely what, to relieve a situation of which it is very definitely conscious and which it feels should be bettered.

The article begins as follows:

"THE VAGUE CRY FOR TECHNICAL EDUCATION."

There is at the present time a great outcry for technical education, although few people have any distinct idea of what they mean when they use that term, or any definite opinion either as to the class of persons who will be chiefly benefited by it, or as to the time of life at which it ought to be acquired. * * *

In expressing my own views on popular education I must address myself in the first place to the present system of primary or elementary education, which is now very generally considered to be ill adapted as a preparation for the business of life. That system has, in my opinion, the radical defect of aiming at instruction in knowledge rather than the training of the faculties. A man's success in life depends incomparably more upon his capacities for useful action than upon his acquirements in knowledge, and the education of the young should therefore be directed to the development of faculties and valuable qualities rather than to the acquisition of knowledge, which may be deferred to more mature age. Not only should the mind be trained in habits of thought, and in quickness and accuracy of perception: but the hand, the eye, and the ear should all participate in training exercises calculated to make those organs more available as instruments of the mind. Nor should the development of the physique be neglected, for with the great majority of both men and women personal vigour and activity are the foremost factors in making a living. Except in teaching the art of writing—which, as a rule, is very imperfectly done in elementary schools—no attempt is at present made to educate the hand. The addition of drawing would be a step in the right direction, and would afford a useful accomplishment, but would not supply all that is needed for giving dexterity to the hand. Appropriate exercises ought to be devised for cultivating its mobility, precision, and delicacy of touch; and if, in so doing, the ability to use simple tools were acquired it would be advantageous in any line of life that might be ultimately adopted. Every man and woman would be the better for preacquired manual dexterity, but to attempt to teach children special trades and processes of manufacture would, I conceive, be a mistake. It would involve great expense, would be a misapplication of time, and would only forestall the more effectual teaching which at a more suitable age may be attained by actual practice in factories and workshops. As to the thinking faculties, they are to a certain extent at present exercised in learning arithmetic, but it would be better if this were done more by reason than by rule. The late Mr. Bidder, who as a youth was called the calculating boy, used to say that he never learned a rule of arithmetic in his life, but taught himself to comprehend the relations of numbers to each other and the result of their combinations by handling groups of peas in such a manner as to visualize a system of arithmetic which his mind could grasp with perfect distinction. It is by methods such as this, rather than by books and rules, that the minds of children should be led on to the forming of clear ideas and to the exercise of reasoning power. A rule may be committed to memory for convenience of use, but the first object should be to make the learners understand, as far as possible, the reasons upon which the rule is founded. But the present system of elementary education does little else than burden the memory with facts, rules, and information, which for the most part are of little use for developing the intellect or preparing it for the ordinary vocations of life. Such instruction excites little interest in the minds of the pupils, and in the vast majority of cases is speedily forgotten. Even in the case of the few youthful minds that appreciate knowledge as thus learnt and display superiority in acquiring it, the effects are by no means invariably beneficial, seeing that such superiority tends to create a fastidiousness which makes manual labour distasteful. Successful scholars, if boys, generally think themselves too good for mechanical work, and aspire to be clerks or teachers, and, if girls, they shun domestic service, and aim at employment as shopwomen, milliners, telegraph operators, and so forth. Thus the *élite* of the popular schools seldom enter the field of manual labour, and when they do, their school acquirements are not conducive either to efficiency or contentment.

The teaching of reading, writing, drawing, and arithmetic are all distinct from instruction in knowledge. They are means to an end, and are necessary both to the attainment of knowledge and to its utilisation. I do not mean to say that the inculcation of knowledge should be wholly excluded from popular schools, but I think it should be limited to knowledge of a very fundamental nature, such as may serve as a basis to build upon in adult life. Juvenile lectures on experimental science followed by easy examinations would also serve a useful purpose by exciting the interest of the pupils and leading to habits of observation and reflection favorable to future acquirements." * * *.

I need hardly say that the ear as well as the eye can have its capabilities exalted by the operation of training. The power of minute discrimination can be given to both, and the one can be awakened to a sense of symmetry, and the other to that of harmony, where those perceptions are natually dormant or defective. In fact, all organic development, including the functions of the brain, turns upon exercise, and youth is the most favorable time for the application of exercise. In cleverness of hand and eye, and in promptitude of action, children at present learn more from their games than from their teachers, and I am inclined to think that training associated with amusement might be so systematized as to produce excellent results, both in mental and bodily development, as well as in the promotion of health and vigour; but in relation to these I may observe that a sufficiency of food and clothing is especially necessary. Indeed the want of it in the children of poverty-stricken parents is already a serious difficulty in popular education."

In the foregoing analysis of what it is in education which is essential to success in life, and to what education should be directed, it will be seen that our author is in substantial accord with the advocates of Industrial and Manual Training among American Educators.

It is, however, in his review of the classes for whom technical education is best adapted that the main interest of his article is found; because, in this, he may be credited with having stated the results of his own observation and experience.

* * *. "I think it must be conceded that where a man fails to get on in the world it is not from want of knowledge so much as from want of natural capacity, and of zeal, energy, and perseverance. If he possesses natural capacity, combined with these qualities, he will not suffer himself to be defeated by want of knowledge; but will surmount all difficulties in attaining it, If there be capable men striving after knowledge necessary to their advancement and unable to obtain it, they have not come within my observation, and as to the incapables, it would be no advantage to them if they had it. Many people imagine that genius is kept down from want of knowledge, and that in many cases it is thus lost to the world. This I entirely dispute. Genius is irrepressible, and revels in overcoming difficulties.

DANGER OF MISDIRECTION OF POWER AS THE RESULT OF ERRONEOUS EDUCATION.

Except in what are called the learned professions, few men who have risen to distinction have owed their success to book knowledge thrust upon them in early life. Amongst engineers I may instance James Watt, George Stephenson, Smeaton, Brindley, and Telford, as men who have made a great mark in the world, some of them a transcendent mark, and yet none of them were loaded with information at school, but were left to educate themselves in after life, with scant facilities, in such knowledge as was necessary to the exercise of their talents and the attainment of their ends. Their receptive faculties might have been quickened by early cramming; but their originality would probably have been impaired, and their natural talents, instead of being concentrated upon the line of thought for which they were best fitted, would have lost effect by diffusion in unprofitable channels. The well-known dictum that if the Romans had had to learn Latin they never would have conquered the world, is suggestive of what our loss might have been if these self-made engineers had frittered away their energies upon inappropriate studies forced upon them at school. What I have said of engineers may be said with equal truth of men who have attained success and reputation in the various phases of mercantile life, and also in the naval and military professions. Take Wellington and Marlborough amongst generals, and Nelson and Blake amongst naval commanders. Surely none of these would have directed the armies and navies of England with more effect if book knowledge had been crammed into them at school, and it is highly probable that their services would have been lost to the nation if success in competitive examinations, such as are now in vogue, had been made a condition of their entering the army or the navy.

TECHNICAL EDUCATION OF SERVICE TO THE CAPTAINS OF INDUSTRY, NOT TO THE MERE LABORERS.

If I were to ask the question, for what class of persons is technical education more especially required, I suppose most people would say, the working classes; but I think a little consideration will show that this answer would not be correct. It must, I conceive, at once be admitted that in the numerous class of labourers figuratively styled 'hewers of wood and drawers of water,' no man would be rendered more efficient by the possession of any kind of technical knowledge, although the value of his labour would undoubtedly be enhanced by his having been, as a boy, trained in the exercise of his hands and limbs. Making one step in advance of the wholly unskilled labourer, let us take for example the case of a "hewer of wood" in the more special sense of a woodman skilled in the use of his axe. To do his work properly would require skill, though of a humble kind, and some degree of intelligence, as well as strength of arm; but it can not be said that technical education, distinct from that which he acquires for himself by his own practice and experience, would add to his skill and efficiency, whether he be an unlettered labourer working for wages, or a distinguished statesman practicing as an amateur. Ascending a step higher in the scale of labour, we may take the case of artificers, such as joiners, carpenters, fitters, and all others who work in wood and iron for constructive purposes. Here again we find manual skill, intelligently used, the chief criterion of the value of their labor. These men in general work under direction, and so long as they do so, it is their manual skill, and not their knowledge, that comes into play. It is, therefore, not easy to see how knowledge distinct from manual skill can add to the value of their labour. As to those whose office it is to direct such labour, they are men chosen for their superior intelligence as well as skill to act as foremen, and whose duty requires them to work more with their brains than with their hands. They, in fact, are persons who emerge from the class of manual workers, and it is here where the value of technical knowledge first comes in. But even in their case all the information they require can be found in a condensed and tabulated form in hand books applicable to all kinds of constructive art. Such technical information is in this form available to every man who can read and do arithmetic, however ignorant he may be of the scientific methods by which such tabulated results have been arrived at. No doubt these handbooks will fulfil their purpose more completely if those who consult them can work simple algebraic formulas or have a slight acquaintance with geometry; but these limited accomplishments can easily be acquired by private study, and are quite within the reach of self-education. In fact experience shows that it is men of this stamp who, on leaving school have voluntarily availed themselves of the facilities offered for self-education in order to qualify themselves for positions of responsibility and superintendence. The next class we have to consider is that of managers and designers, who require technical education in a higher degree; but even here it is only in rare instances that high attainments in science are essential to practical results. It is only in pursuit of research and discovery that highly advanced scientific knowledge is required, and not even then in all branches of science.

Upon the whole I am of opinion that the number of persons who would be benefited in business by scientific education of a technical nature, and who have the zeal, capacity, and perseverance necessary to its attainments, constitutes a very small proportion of the population."

After reviewing the opportunities now existing in English towns for the voluntary acquisition of technical knowledge such as the Mechanics Institutes, Lectures, and Free Libraries, he ends with an approval of Evening Science Classes suggested by Professor Huxley; but is very conservative as to the founding by Government of other educational instrumentalities.

* * *. "I do not undervalue technical knowledge voluntarily acquired as a means to an end, but it is the brain-workers and not the hand-workers who will seek to attain it and benefit by it. Compulsory education is neither justifiable nor practicable except in childhood, and without compulsion I am satisfied that it is only individuals of superior intellect and fitness for business that would perseveringly avail themselves of new educational facilities. Such new facilities should wait the demand for them, and be supplied gradually and tentatively; for it would be folly to rush into new and costly projects without any certainty of their resulting in adequate benefit. I most heartily concur in Professor Huxley's commendation of the great services rendered by the Science and Art Department in the promotion of evening classes for the teaching of art and practical science; and if Government intervention be needed in other branches of technical knowledge, I think it would be wise merely to expand in the same economical and unpretentious line of action.

In the preceding remarks on popular education it must be understood that I am viewing the subject in a purely utilitarian aspect."

(b) "*LORD ARMSTRONG AND TECHNICAL EDUCATION,*" *BY SIR LYON PLAYFAIR, M. P.*

INTRODUCTION.

The challenge thus issued by Lord Armstrong to the Advocates of Industrial Education, was not likely to remain long unanswered. A formal review of his article, and reply to his indictment, by no less a champion than the Right Honorable Sir Lyon Playfair, M. P., who has long been in the advanced rank of the Educational Reformers of England, appeared in the September, 1888, number of the Nineteenth Century.

Very full quotations are given from this article, not only because it meets so fully many of the objections urged by Lord Armstrong, but because it shows, incidentally, how much is doing in England in the very line of education also illustrated in this volume; namely, in the way of evening drawing schools for mechanics. It is of interest, also, to note the illustrations which are drawn from a single American Institution. Sir Lyon Playfair finds, as has already been here said in considering the article he reviews, that in essentials, Lord Armstrong is largely in accord with the advocates of industrial training. The article begins with a consideration of this point as follows:

LORD ARMSTRONG'S POSITION REVIEWED.

In the July number of this Review, Lord Armstrong throws a dash of cold water on the warm efforts which are now being made, to promote technical education. This is a serious discouragement, coming from a man of his eminence as a great manufacturer, and lover of science. * * *. All that he recommends, the promoters of technical education recommend also. He condemns the primary schools of this country because they do not train the faculties of the working classes. The eye, the ear, the hand should be exercised; the body should be kept in sanity; verbalism and useless knowledge should be lessened in the schools. Lord Armstrong would remedy these defects in public elementary education, by introducing a more extended teaching of drawing, by the use of tools, by popular scientific lectures, and by arithmetic, taught more practically and less abstractedly. In other words, our primary schools should be made less bookish and more objective. Wherein does Lord Armstrong differ from the promoters of technical education in these aspirations? We have been long striving to obtain these ends, and he ought to have patted us on the back and encouraged our efforts. The Bills recently introduced in the House of Commons, by the Government and by Sir Henry Roscoe, were mainly to effect these purposes, as their object is to train the eye and the hand to be more efficient instruments of the mind. Such teaching is the basis of technical education, though it would be better to find another name for it. It forms a valuable preliminary to instruction in science and art, because it develops faculties which are much neglected in the elementary education of this country. In one sense, technical education should begin in the 'Kindergarten,' and end at the college, for its great object is to teach working men to observe, to appreciate, and to think. So far, Lord Armstrong and the promoters of technical education are in perfect accord.

He thinks that he diverges from us in the secondary or continuation schools. Let us analyse the recommendations which Lord Armstrong gives in his article; they are as follows:

1. Schools of Science and Art under the Government Department at South Kensington.
2. University Extension Lectures.
3. Above all, Public Laboratories for teaching the Experimental Sciences.
4. Associations of a scientific character, and others applicable to particular lines of business, in which lecturers and papers are given.
5. Higher Colleges founded in the large towns; but they should embrace more practical instruction than they do.
6. Technical Schools, or other instruction in agriculture in the rural districts.

When I examine these six recommendations, I wonder how it is that Lord Armstrong is not a member of our Technical Association, or why he wrote the article. These are the very things that some of us have been advocating and promoting all our lives, both by voice and by deeds. * * * What can be the motive of Lord Armstrong's fears? I fancy it is his apprehension, that we are trying to substitute the school for the workshop. I have laboured to promote technical education for fifty years, and have constantly opposed even the introduction of any kind of actual training in industries into our schools and colleges. To a limited extent I admit that I have been wrong, but I will discuss the reasons for my change of views later on.

Sir Lyon Playfair then treats of the point made by Lord Armstrong, that the great steps of scientific industrial development have been taken by men who had had no advantage of technical training, and admits that educational methods are, of necessity, directed for the benefit of ordinary human beings, and do not, or can not, take into account, wholly exceptional individuals endowed with the gifts of transcendent genius.

In the meantime, let me discuss an argument on which Lord Armstrong lays great weight. He states, that the great discoveries in science, and the great applications in industry, have been made by men of genius who never had any technical education. He is quite right in stating that men of commanding genius have made their mark in the world without technical education, and that they have profoundly altered important industries, though he does not prove that their difficulties would not have been lessened had they possessed it. He might have gone further and pointed out, that these great revolutions of industry are generally produced by outside men of genius, who were not driving in the usual ruts of an industry, but viewed its needs from without. Possibly, technical education might have contracted their originalty and power of work, though I do not think it would, for genius is irrepressible. Nevertheless, the fact is true, that the great revolutions of industry come from without and not from within. Watt, who transformed the steam engine, was a mender of philosophical instruments, and first thought of the engine when called on to repair a model for the Andersonian Institution in Glasgow. There, he got lectures in science, and the cross fertilisation of this with his practical aptitude, bore its glorious fruit. George Stephenson, the founder of the railway system, was a collier, having had no facilities for early education — a subject of much regret to him in after life: he took care that his son Robert, the eminent engineer, should have the fullest scientific education within his reach. Arkwright, who revolutionized cotton-spinning, was a barber, and from want of education, lost much time in trying to discover perpetual motion, but at last triumphed in industrial invention by his mechanical genius. Cartwright, the inventor of the power loom, was a clergyman, and certainly was not educated in technics. Hargraves, the inventor of the carding machine and spinning-jenny, was a hand-loom weaver, and may be said to be an inventor from the inside of the industry: he was, unquestionably, illiterate. Many other names in science and industry, as Davy and Dalton the druggists, Faraday the bookbinder, Wheatstone the maker of musical instruments, Bell of the telephone, who was a teacher of deaf mutes, are instances of genius from the outside, illumining the science of industry which they advanced by such gigantic strides. I do not at all dispute the fact, that men of genius can overcome the defects of their education, and can surmount difficulties which would prove fatal to men who had not the gift of genius. The latter are rare in the history of the world, and education is not modelled to suit their needs. The men who carry on the great industries of nations, are rarely in this category, and do benefit, by a training of their intelligence in direct relation to their respective occupations.

Our author then proceeds to state the purpose of this technical training, and to show how large in the city of London, itself, is the demand, by the workers themselves, for the knowledge given in the evening schools for mechanics.

The object of technical education is, to give an intelligent knowledge of the sciences and arts which lie at the base of all industries. It is best given early in life before the youth goes into the workshop for his practical training. This is the character of the course given at the Finsbury School. Instruction of this kind is founded on the principle, that the chief object of technical education is, to teach the student to understand what he sees, and not to teach him to produce what he has not seen. Advantageous as this method is, it is difficult to get hold of boys at this early stage. It is therefore necessary to give instruction in evening classes, to young men actually engaged during the day in trades or manufactures; and then it is found advantageous to apply science and art to the explanation of their own special industries. In this way, technical education becomes the *rationale* of empiricism, while the knowledge imparted, dignifies and fructifies labor. This is the form of instruction which most commends itself to working men, as is seen exemplified in the large polytechnics which are rising with such astonishing rapidity all over the metropolis, and to a less degree in provincial towns. When tens of thousands of young working men in London, are found to give up their whole evenings to acquire such knowledge in relation to their industries, it is impossible to deny that the system must suit their requirements. These evening classes have actual workshops in the several trades, and the scientific teaching is employed in direct illustration of the industry.

In illustration of this modern tendency to combine theory and practice, in teaching relating to the industrial arts, the American School, known as "The Lowell Free School of Design," connected with The Massachusetts Institute of Technology, in Boston, of which General Francis A. Walker is the president, is thus alluded to, and the adoption of a like system in several English colleges noted:

> Even in the most thoroughly organised technical schools, such as that in Boston (New England), actual industrial work has become part of the training. I select a single instance for illustration. A student is being trained as a designer, but his instruction is not limited to art. He is taught the principles of science involved in calico printing; he then makes designs; has to cut them in wood; has to block them out in mordants, and has to follow them through the actual processes of dyeing or steaming, so as to see the adaptabilities of materials to the effectiveness of his design. This mode of practical teaching, obviously suits the industries of America, for a successful student can immediately obtain employment. In all cases, the industrial illustration is only a supplement to the scientific and artistic instruction. In England, a similar practice is arising in the higher colleges. Thus, the Yorkshire College has a department for weaving and dyeing. I have before me, as I write, twenty-four letters from past students of this course. Some of them are the sons of manufacturers, others are men who have gone into employment. They all write in the warmest terms of the practical advantages which they have experienced by the weaving and dyeing classes, combined with the scientific teaching of the college. The first letter that I take up by chance, is from a Canadian who had returned to his father's business, and he says, that his technical education has enabled him to double the output, and greatly to improve the character of the goods.

The presence of actual working mechanics in London, in attendance on evening schools devoted to their specialties, is then recited, and several reasons for this given:

> Let me return to the popular polytechnics, such as Mr. Quentin Hogg's institution in Regent Street, in which, some thousands of actual working men go through workshops of their own trades in evening classes. What should induce bricklayers to attend a class of bricklaying? Why should tailors pass through a course of cutting and fitting, or watchmakers go through a class of watchmaking? All this clashed with my old ideas and gave them a rude shake. By talking to the men, I gradually came to an understanding of their wants, and I sum up their explanations as shortly as possible.
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> In all industries, there is much division of labor, so that a workman may be put on one small part of a trade and understand nothing of it as a whole. In making watches by machinery girls are employed to put the wheels into the case, and experts may make nearly 2*l.* weekly in this occupation. Skilled as they are, they may know nothing of the nature of a watch or the conditions of its movements and regulation. To the manufacturer, the scientific ignorance of his skilled operative matters little; but the workman, knowing that he is put into the world as an intelligent being, is not content to remain in ignorance, because he desires to dignify and fructify his labour by understanding it. It is surely creditable to workingmen, that they should wish to have an intelligent acquaintance with the whole industry in which they are engaged, and not to remain satisfied with the mere empirical skill spent upon the small corner of work allotted to them in the division of labour. In addition to this desire, there is also, a practical necessity for a more extended knowledge of their industry than is attainable in the workshop. The rapid improvements in machinery are producing constant dislocations in labour.

Our author remarks that new inventions frequently result from strikes in particular trades,—an additional example of the truth of the old proverb, that "necessity is the mother of invention." He shows how the constant dislocation of labor, resulting from these new inventions, necessitates the increased education of the workers, if they would rise, and remain above the lowest grade of manual laborers:

> The machine takes the place of brute animal force. This is ultimately beneficial to humanity, because the sweat of the brow and the mere labour of the body are relieved by the intelligence of the brain. Labourers, however, suffer during the process of change. In fact, the too rapid dislocation of labour, caused by recent developments of applied science, has been the chief cause of trade depressions. This has divided labour into two categories—labour of quantity and labour of quality. The labour of quantity represents Lord Armstrong's hewers of wood and drawers of water, for whom, he thinks technical education is wholly useless. It is true, that their labour is little more than brute animal force, which is being steadily pushed into the background by invention. Such brute labour is continually decreasing in value as a factor in production. Labourers of this kind, pushed aside by machinery, are too familiar to us under the name of the 'unemployed'—a class that is likely to increase in a dangerous way, unless we cultivate their intelligence by a better education, so as to enable them to pass from the ranks of labourers of quantity into those of quality. Let me illustrate my meaning by an anecdote. An Irish hod man wrote to his friend in Ireland, the following letter: 'Dear Pat—Come over here and earn your money. All that you have to do, is to carry bricks up a ladder, for there is a fool at the top who takes them from you and does all the work.' The labour of the poor Irish hod man has been destroyed by the steam-engine, which now hauls up the bricks, though the labourer of quality still holds his own in building the house.
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> Even though the labour of quality, guided by trained and skilled intelligence, contrives to have ample employment in production, it also is subject to dislocations, sometimes of a violent character. When Bessemer invented his new method of making steel, thirty-nine thousand workmen formerly engaged in making bar iron in puddling furnaces, lost their means of making a living, because the industry took a new direction.

Our author then urges at some length, that for all above the lowest grade of laborers at least, a higher grade of trained intelligence is most desirable, in view of the constantly recurring dislocation of industries consequent on new inventions. In this desire, he ventures the opinion, that Lord Armstrong would concur.

He then proceeds to consider the reasons why Lord Armstrong, in common with other distinguished engineers, is comparatively indifferent to the importance of this technical scientific training in educational institutions, and refers again to the practical working of a department of the Massachusetts Institute of Technology.

> Lord Armstrong belongs to that distinguished body of engineers who have advanced so much, the industries of this country. They are generally indifferent to technical education, because they feel with just pride, that their offices and workshops have been schools for engineers and have produced admirable men. It is true, that the office of the engineer aims only to teach the apprentice the manipulative skill and constructive work, leaving him to pick up scientific knowledge where and how he can. When engineers see that schools and colleges are actually furnished with workshops in which mechanical drawing is thoroughly taught, and where pattern making, moulding and founding, form part of the curriculum, and an intimate acquaintance with the use of ordinary machine tools, is given simultaneously with scientific education, the old engineers shrug their shoulders, and approve of Lord Armstrong's attacks on the new modes of technical education. Every one admits, that English engineers in the past, have efficiently trained young men by their system of apprenticeship. There are many other industries, like those of metallurgy, chemical manufactures, and textile fabrics, which have never given methodical training within their factories. For those who have to follow their pursuits, outside technical education is necessary. Even in regard to engineers, a growing demand for more methodical instruction than that given in the workshop,

> has arisen. It is stated, by those who have especially attended to preliminary instruction in engineering, that three years at colleges of this kind, combined with two years in the workshops, turn out better men than five' years apprenticeship in the latter. The proof of this is, that there is an active demand for men trained in this way. On my last visit to the great technological school of Boston, I found a display of competitive designs for a particular kind of bridge. While I was looking at the drawings, the largest builder of bridges in America, came in, and being much struck with the excellence of one of the designs, he sent for the student and engaged him at a good salary. The hundreds of students who pass through that school, find no difficulty in obtaining employment, though at first, their salaries are moderate, for they have much useful experience to learn in the actual workshops of industry. The reason for this is obvious: the object of a school is to teach, while that of the workshop is to pay, so the purposes of both must be brought into combination. In former times, all industries were taught by apprenticeships, which really afforded a good technical education suited to past periods, when industries were carried on by rule of thumb, and not on scientific principles. * * * Industrial occupations are acquiring the dignity of a profession, because they are now based on a knowledge of science. Science has, in recent times, produced so many applications, that the modern manufacturer stands at a great disadvantage when he is ignorant.

He shows how the capitalist manufacturer is apt to be indifferent to the importance, that the workmen of all grades, shall have the scientific training offered by the technical schools until he is aroused to the perception of the fact, that an intimate relation exists between the prosperity of trade and the scientific skill of the workmen: this is illustrated as follows:

> While Coventry and Spitalfields were losing their silk industries, the town of Crefeld, in Germany, was spending 215,000*l.* on its lower schools, and 42,500*l.* on a special weaving school. It has doubled its population and quadrupled its trade, and now sends to us as imports, the silks which we have lost by a failure of our own industries.

In an article entitled "Applied Science and Trade," which was published in another periodical, (the Contemporary Review of March, 1888.) Sir Lyon Playfair made use of an instance which so emphasises this blindness of people to the importance of trained industry that I quote it here. It is given in connection with the suggestion, that it is not by fiscal laws, but only by trained intelligence, that nations or cities can, in the present day, hope successfully to compete in the world's industrial contests for trade. He says: "It is a melancholy spectacle to see a town like Norwich, once famous for its shawls, actually contending with the Charity Commissioners, because they wish to utilize its fine endowments, by creating a system of technical education, while the civic authorities struggle for alms houses!"

This reply to Lord Armstrong's article, closes with a statement of the English system of founding, by private effort, local technical industrial institutes, by which plan, their individual development is secured; since each institution has been the outcome of the perception by some public spirited individual, or association of individuals, of the special needs or opportunities of the given locality.

The mechanics' evening schools, as well as the institutions for giving the higher branches of technical education, have in the United States, had a similar origin and development. It is to be hoped, that these American local institutions will rapidly multiply all over the country, each adapted to the local needs

Incidentally, a most important condition is suggested; that is, that owing to the wonderful cheapening of transportation, the local advantages of the possession of raw-material of any kind, are largely neutralized; and, consequently, the element of skill continually assumes a larger ratio as a factor of success.

We have not adopted the type of apprentice-schools in France, because we think that trades are better learned in the workshop than in the school. We have not taken the type of the foremen-schools of France and Germany, partly because we have not the means for supporting such a system, and partly, as we think it is best to let technical education grow naturally out of the colleges for general education. We have not even tried to force upon our Government, great polytechnics for training managers, although we have seen Munich erecting one at a cost of 200,000*l.*, and Berlin, another at 450,000*l.* The promoters of technical education in this country, prefer to see schools for industrial training taking root in the manufacturing towns, and growing according to their specific wants, without any uniform system of planting. We are mindful of Pope's maxim, that it is wise to "Consult the genius of the place in all."

We would rather see Manchester, Liverpool, Bristol, Birmingham, Nottingham, Leeds; Sheffield, Newcastle, Glasgow, and Dundee, working out their salvation in their own way, even if that be 'vague,' and not specific. They may make mistakes which in time, they will rectify by experience, but they will certainly make fewer mistakes than they would do, if their schools were all moulded on a uniform plan emanating from the Central Association for the Promotion of Technical Education.

When it is seen, that all the nations of Europe, as well as the United States, are vying with each other to promote technical training, and that they are spending vast sums from national resources, in order to get ahead of each other in the race, perhaps Lord Armstrong may regret that he has tried to check our modest efforts to effect, by private energy, results which elsewhere have been accomplished by strong Governments. I am sure, that he is the last man in England, who would desire that the working men in England should continue to remain in reality what they are in name—the mere '*hands*' of workshops, without having their *heads* full of trained intelligence to guide their work. They should have an intelligent knowledge of the industries in which they are engaged, and not only of the fragment allotted to them in the division of labour. A workman should not be like a single wheel in a large machine, useful in one place only but useless in every other place. The mere accident of local advantages, such as the possession of coal and iron, cotton and wool, is now a small factor in the industrial competition of nations; for trained intelligence, required to convert them into utilities, has become the great and growing factor of production. The competition of the industrial world has no doubt resolved itself into making commodities of superior quality in the cheapest way. Luckily for humanity, that is not to be attained by the cheapest labour. On the contrary, labourers with low wages produce dear things, and those with high wages, cheap things. It is only the skilled workmen, who, in the present keen competition of the world, can obtain high wages: they are cheap at the price, because they bring a trained intelligence to bear upon their powers of production.

(c) "*THE CRY FOR USELESS KNOWLEDGE*," BY LORD ARMSTRONG.

PRELIMINARY WORDS.

The reply by Professor Playfair to Lord Armstrongs first article, was met, in turn, by a rejoinder from the latter, which, under the above title, appeared in the November, 1888, number of the Nineteenth Century.

From this it appears that not only Sir Lyon Playfair, but several other advocates of the new Technical Education had taken up the gauntlet thrown down by Lord Armstrong in his former article. This reply is also of interest not alone for the manner in which it directly meets the criticisms and propositions advanced by these advocates, but also by reason of the additional topics and statements presented. Some of these are partially set forth in the following quotations from this latest contribution to the discussion.

The fact that this particular number of the Review in which Lord Armstrong's second article appears, opens with a very remarkable protest by the leading educationalists and publicists of Great Britain, against the system of competitive examinations which has grown up during the past half century, has had its influence upon this article.

The description of the educational instrumentalities set on foot by the Elswick Company, is in the direct line of the subjects included in this volume of the Report; for, in this second article, Lord Armstrong incidentally gives a most interesting account of the schools established for the benefit of the people employed in the great works which have grown up in connection with his own inventions.

His references to the importance of the movement which has arisen in opposition to the system of competitive examinations; saddled upon England, by the adoption, some forty years ago, of that method of gaining entrance into the public service, prompt the introduction later in this appendix of a brief résumé of the protest itself. This topic of governmental entrance examinations, not otherwise pertinent to this Report, having thus been suggested, is timely in connection with the consideration of any problems of American education; because, without the reasons which gave plausibility to such a plan in Great Britain, theorists and self-termed "Reformers" have already succeeded in partially introducing the self same system in the United States; and are, at present, seeking to fasten it upon the American people. It is, therefore, highly proper that a knowledge of this significant protest, by the very class in England whose American prototypes are the propagandists, 'par excellence,' of so called "Civil Service Reform," should be widely disseminated among the educators and friends of education in the United States. These English authorities speak from bitter experience; the American advocates, who seek to impose upon the people of the United States a like burden to that which their English friends so earnestly seek to be rid of, speak only from theory!

This English Protest, is entitled "The Sacrifice of Education to Examination," and is signed by hundreds of the leading educators, statesmen, and authors, of England. Professors Max Muller, Edward A. Freeman, and Frederick Harrison, comment at length upon the evils thus developed. These papers not only give unusual interest to this number of the Review but directly challenge the consideration of all thoughtful American educators and statesmen.

If we look at the proposition to declare that the only entrance into government employment is to be by competitive examination, we shall see that this is to take, by apparent indirection it is true but none the less positively, such a step toward the government direction of all education as may well give pause to American legislators; to whom the following suggestion by Professor Frederic Harrison, may be commended, when he says: "As a rule, I think people whom we trust to govern must be trusted to select capable agents. If we can not trust them to do this, let us not trust them to govern us. If examinations are required to restrain jobbery, I prefer to deal with the jobbery face to face and by direct means, and not to pervert all public and private education, in order to checkmate the wicked jobbers, and reward the best crammed ones."

In this connection, also, the following pregnent words by Lord Armstrong are worthy of heed:

"The schoolmaster element is indispensable for children; but after childhood the less we have of it the better. Men should not be carried where they can walk, and independence of mind and action are essential to vigorous and active life." Such independence is impossible when, as Frederic Harrison again says, "The examination, thus made the fountain of honour, governs the whole course of study." When entrance into the public service depends on the passing by the applicant of a civil-service examination, what else can that essential examination be termed other than the "fountain of honour;" nor will its influence be by any means limited to the applicants for these positions, the schools of the people will inevitably, sensibly or insensibly, be modified and shaped in accord with such examinations; for, since here the people are the rulers, ought not all the people to have an equal chance for holding public office and, therefore, ought not all public schools to fit their pupils for the necessary examinations? What the results have been in England, as shown by such a cloud of witnesses, should be carefully considered before final legislation imposes such bonds on the free people of the United States.

In England, the result of throwing open the government positions to the winners in competitive examinations, was a conquest by the common people of an opportunity to obtain, as a right, some of those positions which had hitherto been distributed as a gift, by the upper classes. It was, therefore, in England, a method of gaining power by the people; but, in this country, where the people themselves have ever been the sources of all political and governing power, the analogy fails utterly; and here, we shall have little of gain to offset such evils as, after years of experience, have forced the former advocates of the plan in England to such emphatic protest.

Nothing is more delusive than to legislate as if the same methods were equally applicable to citizens of the United States and to the people owing allegiance to the Queen of England. The framers of the Constitution of the United States, whose wisdom succeeding statesmen of all countries unite in praising, purposely established essential differences between this written constitution and the unwritten constitution of England, which have profoundly affected the development and character of the people of this American commonwealth. It is not the part of wisdom, or statesmanship, to ignore this elemental difference between the two countries.

This matter of "civil-service examinations" strikingly illustrates the underlying difference thus created between the two nations by the founders of the new Republic.

In England this competitive examination for entrance into official position was a hammer with which to shatter some of the barriers of caste. In the United States it is, on the contrary, a subtile, potent instrument for building up a separating wall of caste; for, utterly inconsequent and illogical as it is in its present inchoate state, it is seen to be perfectly designed for such a purpose when the full intent of its framers is unmasked; and the plan of establishing a separate class, or "caste," of life-long office-holders, stands revealed.

If the people of the United States wish to create such a privileged class, analogous to the bureaucratic classes of European despotisms and monarchies, no surer plan can be imagined than the one comprised in the civil-service regulations; with their provisions for exhaustive entrance examinations, and for the exclusion of all persons over forty-five years of age from this competition. Retiring pensions of all officials would naturally follow, in due time. It is not to be denied that this plan offers many very desirable advantages to the fortunate individual office-holder, who has, in the past, suffered certain needless injustice, which ought long since to have been corrected. It is a knowledge of the evident defects of the former system which has given surprising impetus to this movement.

It is a little curious, however, to recall, in this connection, the circumstances which led to this new movement, which had its birth in the city of New York, and was fathered by Mr. Dorman B. Eaton, with Mr. George W. Curtis, of Harper's Magazine, and Mr. Lawrence Godkin, of the Nation, as sponsors.

This new candidate for public favor was named "civil-service reform" and was inaugurated as a protest against certain sweeping changes in the *entourage* of the Federal offices in the city of New York, which had just then taken place; resulting from a succession of like sudden changes of the chief officials, which chanced to occur at that time. The ostensible motive and object of the new movement which at that junctnre especially commended it to the public, was that it was to *prevent*, by legislation, *removals from office*, save for cause! As it is now admitted that there is no power in Congress, to hamper by legislation, the constitutional prerogative of the President of the United States to appoint and dismiss his executive officials at his own discretion, subject only to the provision of the Constitution requiring that *his* nominees to certain offices must be confirmed by the Senate; it is evident that the main purpose of this newly discovered remedy was an impossible one, and that it had, therefore, from its first conception, no sufficient *raison d'être.* The arguments now urged by its main supporters relate entirely to entrance into public service, while its founders, apparently oblivious of the provision of the Constitution, were thinking only of controlling the methods of exit from the Government offices!

It is for the people of the United States, professedly a Republic, to decide for themselves whether, in addition to the military and naval service, it is necessary, in the interest of all the people, to take up the burden of a third class of life officials; outnumbering, by scores of thousands, the officers of the Army and Navy combined. The tendency of a fixed class of officials to aristocratic development has often been remarked in the individuals comprised in these two classes, which are, theoretically, under the control of the civil power. Perhaps, in this connection, the story of "Sinbad and the old man of the sea," might be profitably considered; at all events it should be borne in mind that the resultant influence of the creation of this third class of permanent officials will not be in the least modified by the fact that the change was effected by means of the specious plea that thereby the people would be freed from the evils of appointments made through personal and political influence.

Whatever evils may have arisen from such causes—and no human systems or methods are perfect—it should not be forgotton that the history of the United States officials, for a century, compares favorably, so far as integrity and efficiency are involved, with that of those of any other country!

If the system of competitive examinations and a permanent life class of officers is to be adopted by the people of the United States, which, by the way, can only be effected by a change in the Constitution itself, it should be with a clear understanding of the inevitable results; what these results have been in England may be seen in the pages of the English Review referred to.

A consideration of the evils against which the protest referred to was made, enters largely into the closing pages of Lord Armstrong's rejoinder; while, at the end, he makes a distinct statement of his adhesion to the protest.

A few brief extracts from the articles by the three professors already named as voicing the reasons for this formidable protest, will follow the quotations from Lord Armstrong's article, which begins as follows, under the significant title of

THE CRY FOR USELESS KNOWLEDGE:

"I am glad to find that my paper on "The Vague Cry for Technical Education" has met with much more concurrence than dissent, and I am also gratified to observe that such of my critics as have disagreed with me have expressed regret at my inability to join their cause rather than reproach for my having discouraged it. I am fully sensible that my opponents in this controversy are persons who are actuated by most laudable motives, and I am quite in harmony with them in desiring to see great changes in the present system of school education, though I differ from them as to the form that the new system should take. I am also an advocate for secondary education in a limited degree, and have emphasised my advocacy by giving it substantial support; but my observation and experience compel me to value both the extent to which it is required and the benefits to flow from it at a much lower estimate than that of the enthusiastic supporters of so-called 'Technical Education.' The author of an article in *Nature*, while not disputing what I have said respecting the vagueness of the cry for technical education, turns upon me and says that I am equally indefinite and vague. The argument of '*tu quoque*' is always a weak one; but in the present case it is also inapplicable. In the agitation for technical education now going on I am merely a spectator wishing to understand what the agitators mean when they so indiscrimately use the terms 'Technical,' 'Art,' and 'Science,' and it is not for me to furnish them with correct definitions. The same author says that in almost every paragraph of my article 'we recognize that we are reading the words of a true representative of that remarkable genius, the practical Englishman who has been the glory of his race in the past, but threatens to be its destruction in the near future.' Well, I have passed through the phase of being treated as an amateur and a theorist not likely to succeed for want of practical acquirements, and now I have arrived at the contrary phase of being treated as an old-fashioned man of practice deadened to the claims of theory and new ideas. I must leave my friends to judge to which extreme I belong, or what is my place between the two. In other respects the article is chiefly remarkable for the wail at the end that, if practical men remain much longer of my opinion, 'then is the fate of our nation sealed.' * * * .

He then refers to Professor Playfair and says that his article instead of being an answer is merely given to "minimising the differences of view" that exist between them. He says:

> * * * Professor Playfair is good enough to say that he would welcome my alliance as one who was unaffected by enthusiasm or emotion. I return the compliment by observing that I should be equally glad of his alliance on the ground of his philanthropy and influential name, though not on the score of the enthusiasm and emotion with which he treats the subject. I am afraid that his belief in the unison of our views will be sadly shaken by what I shall now proceed to say, and I shall endeavor to express my meaning in a manner which shall exclude ambiguity and misconception.
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> Sir Lyon Playfair declares himself an advocate of including within the scope of technical education the teaching of specific trades and industries. I, on the contrary, say that workshops and factories, or other places where actual business is carried on, are the proper schools for the learning of such trades and industries. Here at once we stand face to face in diametrical opposition. Nor is our agreement more apparent in his definition of the object of technical education, which he says is 'to give an intelligent knowledge of the sciences and arts which lie at the basis of all industries.' This is not very clear, but as he proceeds to mention with approval the attendance of bricklayers in a class of bricklaying, tailors in a class of cutting and fitting, and watchmakers in a class of watchmaking, we are at no loss to understand the scope to be given to the education he demands. But I ask, what does he mean by the 'sciences which lie at the basis' of these examples of industry? It is certainly not usual to regard tailors and bricklayers or even watchmakers, so far as the operatives who make the wheels and parts are concerned, as practising trades which are founded on science.
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> WHAT TRADES SHALL BE TAUGHT?
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> But let us follow up Professor Playfair's premises to their legitimate conclusion. If we are to give technical education at the public expense to operative tailors and bricklayers, from what trades and occupations can it in fairness be witheld? If he will consult the *London Post-Office Directory*, he will find that in the metropolis alone there are upwards of 4,000 separate industries, all involving more or less of art, and none of them with less pretension to a scientific basis than bricklaying. Even the mere trader who only buys and sells has to exercise art in judging of his wares, and might, if it were any good to him, claim to be instructed in some branch of science having a shadowy association with the production of those wares. Now, if Professor Playfair contends for this wholesale instruction at the public expense, his contention is simply impracticable. If, on the other hand, he makes a selection, it is manifestly unfair. But what is to be gained by handing over to the schoolmaster and professor the teaching of every trade? Sir Lyon Playfair, in a second definition of the object of technical education (for he adds confusion to obscurity by using two), says that 'it is to teach the student to understand what he sees, and not to teach him to produce what he has not seen'—a definition which seems even less clear than the first. He goes on to say that 'technical education becomes the rationale of empiricism, while the knowledge imparted dignifies and fructifies labour.' This line of argument has the advantage of being difficult to answer, not because it is cogent, but because it is impalpable. If, however, he give up the argument of utility, which alone can justify public expenditure, I will leave him in possession of the field on the question of dignifying labour.

He then takes direct issue with Professor Playfair.

Here it seems plain that Lord Armstrong has in mind, not the mass of people for whom in America elementary industrial instruction in the public schools is sought, but those few who have higher aims, and among whom the leaders, the "Captains of Industry," are to be sought. From Professor Playfair's references to the Massachusetts Institute of Technology in Boston, it might be thought that *he* had also in view the exceptional few rather than the common many. So long as the terms "industrial" or "technical," are so ill defined as to be used at one time as synonyms for the same training; and at another, as absolutely differentiating between methods; there seems no escape from confusion. This difficulty is in this case increased, owing to the fact that the Massachusetts Institute of Technology is rather a congeries of classes than a single institution. It is a miniature educational solar system, as it were, which includes both planets and asteroids; the highest Technical specialties, and elementary Manual Training, being embraced within its orbits. Having this wide range of studies, and Departments, the Institute, seems to foreshadow the future Science University.

Lord Armstrong thus states his belief:

> "In another place he almost acknowledges the absence of utility by saying that 'to the manufacturer the ignorance of his skilled workmen matters little,' but 'the workman knowing that he is put into the world as an intelligent being is not content to remain in ignorance, because he desires to dignify and fructify his labour by understanding it.' But I deny that workmen *as a body* have any such desires or aspirations, and I reassert my opinion that the number of persons who would be benefited in business by scientific education of a technical nature, and who have the zeal, capacity, and perseverance necessary to its attainment, constitutes only a small proportion of the population. These are the words that I used in my former article, and I will now adduce statistical facts falling within my own personal experience to corroborate what I have stated.

He then proceeds, in illustration of his contention, to give a statement full of interest in itself, of the social and educational surroundings of the people living amid the great works which have given him fortune and world wide fame.

> "The Elswick Company many years ago provided extensive schools in connexion with their works, and also a Mechanics' Institute which now possesses a copious library; and in which rooms are provided for evening science and art classes, conducted by able teachers. The Company have from time to time added to these buildings to keep pace with the increase of the neighbouring population, for which they now afford ample accommodation. The subjects taught in the evening classes are chiefly those which bear upon mechanical engineering, naval architecture, and building construction, but they include chemistry, for the teaching of which an excellent laboratory is attached. They also comprise mathematics, electricity. sound, light and heat, together with drawing in all its branches. French and shorthand are also taught, although these two subjects have not the advantage of coming within the scope of the Science and Art Department. The cost of the teaching, both in the schools and in the science classes, and all the current expenses, are defrayed by Government grants obtained under the regulations of the Science and Art Department, and by a tax varying from 1 d. to 2 d. per week, on the workmen employed by the Company according to the rate of wages they receive. The whole of this educational establishment is open to the use of the Elswick workmen and their families without further payment, except that those who attend the evening classes pay certain additional fees, varying with the number of subjects undertaken by each student, and which if spread over the whole year would give on a average about 2d. per week. Strangers are admitted to the classes on payment of, roughly speaking, double fees. The number of men and boys employed by the Company is about 13,000, but the number who contribute the weekly pence is about 10,000. There is, also, a large adjacent population engaged in engine works, ship-yards, foundries, forges, chemical works, etc., all involving practical science in a greater or less degree, and some of them in as high a degree as almost any trade that can be named. And yet out of this large population the number of men and boys who avail themselves of the cheap and effective instruction afforded by these evening classes is on the average not more than 350 at one time. There is another important and ably-conducted establishment in Newcastle upon self-supporting principles for scientific instruction, and also a College of Physical Science which is now doing very good work. I am not in a position to speak with accuracy of the numerical results of these two institutions in relation to the surrounding population; but I am certain that the combined number of their voluntary students forms an extremely diminutive proportion of the people who might avail themselves of the proffered instruction if they were disposed to do so.

THE SMALL NUMBER OF WORKMEN WHO DESIRE ANY TRAINING IN SCIENCE.

> "Now if the proportion of persons aspiring to scientific knowledge be so small in the case of industries like those practised on the banks of the Tyne, what would it be in the case of industries which have no tangible connexion with science? Take,

for example, the great national industry of cotton-spinning, in which we are so hard pressed by the foreigner. Can Professor Playfair pretend to say that we have only to provide 'large Polytechnics' in the cotton-spinning district of this country to induce the operatives to come into them in 'their thousands and tens of thousands' in order that they may acquire 'an intelligent knowledge of the sciences and arts which lie at the basis of their industries?' I would ask what are the sciences and arts which lie at the basis of cotton-spinning, which is only one of many industries in which the same question may be asked without hope of a rational answer. But let me return to the Elswick classes and state the results of this technical teaching both as regards advantage to the students themselves and the Company which promotes it. Of the 350 students who attend the classes, about two-thirds are journeymen and apprentices employed in the works. The remainder are employed elsewhere, and not unfrequently leave mechanical work and become teachers in schools or obtain employment in some other capacities where literary or scientific tastes can be gratified. I cannot very confidently say that those who continue their mechanical employment become as a rule more skilful workmen in consequence of the scientific instruction they have received; but when they possess the qualities necessary to make good foremen their acquirements in practical science naturally contribute to their being advanced to such posts, and in some cases they work themselves up to much more important positions. They are generally men of ability and good conduct, which favours their advance more than their superior education.

VERY SMALL DIRECT ADVANTAGE TO THE COMPANY.

"As to the advantage resulting to the Company from this scientific teaching, it improves the class of persons from whom selections are often made to fill vacancies in positions above those of ordinary workmen; but it would be absurd to say that the successful competition of the Company with foreign manufacturers is in any degree due to the educational measures it has taken. This is a plain unvarnished statement of the economic advantages to the students attending these classes and to the Company who support them; but when the advantage to the students is viewed in the light of mental culture and refinement, it must be estimated at a much higher standard. Whether knowledge in science and literature be acquired by reading and study, or obtained through the instrumentality of teachers, its effect in elevating the intelligence, expanding the intellect, and opening out pure sources of enjoyment in displacement of evil ones is beneficial in a very high degree, and I think it no small thing that 350 students should in every two or three years leave the Elswick classes to impart a wholesome leaven to the great working population of the district."

It will be seen that Lord Armstrong in no wise questions the great advantages of education to the individual, it is only its direct economic value that he is questioning. He now, however, proceeds to question an oft repeated axiomatic statement by the advocates of Industrial Training as follows:

"It is said that amongst other reasons why technical schools are called for is the decadence of apprenticeship; but, as far as I know, apprenticeship has only been discontinued in trades where by the division of labour and the use of machinery the functions of the workmen have been narrowed to processes so easily learnt as to render apprenticeship unnecessary, and if this be so why should we seek to establish a substitute, especially if that proposed be a bad one?"

He then, in a very common sense way, takes up the question of the reasons why German clerks find employment in England, and makes a pertinent suggestion as to the period when foreign languages may be most readily and economically learned; a suggestion worthy the consideration of Kindergarteners and primary school teachers, in which schools, rather than in the high schools, the modern languages should be taught if Lord Armstrong is correct in his inference, and it must be admitted that the indications of nature in teaching their "mother tongues" to mankind, seem to sustain Lord Armstrong in his conclusion.

"Again, it is said that popular instruction in modern languages is required to enable English commercial clerks to hold their own against the intrusion of German clerks. But I suppose that it will be conceded that German clerks will always excel English clerks as German correspondents, just as English clerks will excel them as English correspondents. Therefore, so far as the German language is concerned, our clerks should take their superiority in English to Germany, just as German clerks bring theirs to England. But our countrymen would labour under two disadvantages: (1) The commerce of England being many times greater than that of Germany, the demand for German clerks in England must far exceed that for English clerks in Germany; and (2) the Germans are content with smaller pay. At any rate the number of Englishmen, however well qualified as linguists, required to fill the position of corresponding clerks in all the commercial offices in this country is but a small drop in the bucket of population; and self-supporting schools for the teaching of languages seem to be the proper source of supply. There can be no reason why rate-payers should be burdened with the cost of providing English clerks conversant with foreign languages for merchants who are not satisfied with the cheaper services of foreigners. And here let me throw out a suggestion as to educating children as linguists where it may be desirable to do so. Languages are acquired with such extraordinary facility by young children, that special infant schools might be used for the initiative teaching of modern languages colloquially. I know of an instance in which three children, ranging from four to seven and a half years of age, can speak English, French and Italian with equal facility, which they have attained without an effort."

He then proceeds to add to his former list of great inventors the several names supplied by Professor Playfair, and afterwards thus questions the latter's assertion that "the men who carry on the industries of nations are rarely in this category, (of men of genius) and do benefit by the training of their intelligence in direct relation to their respective occupations."

Lord Armstrong says:

"But, in the first place, are these men entitled to the appellation of 'genius!' Certainly, not all of them, unless we adopt Carlyle's definition, that 'genius consists of an unlimited capacity for taking trouble.' That, at all events, is the kind of genius that overcomes the difficulties. But, I assert, that both men of genius who have made great discoveries and inventions, and men who have simply distinguished themselves as men of business, are to be found in the same category. The self-made men, or in other words, the self-educated men, may almost be regarded as the prevailing type of successful men, and it is clearly an open question whether their number would be materially increased by additional facilities for obtaining scientific and technical knowledge.

If Professor Playfair looks around him, he will see that the men who carry on the great industries of nations, so far from being rarely in the category of self-made men, predominate in it.

He further says, that the 'great revolutions of industry are generally produced by outside men of genius, who are not driving in the usual ruts of an industry, but who view its needs from without.' I should have thought, that the man of genius working inside of an industry, had a much better chance of comprehending its needs than the one who viewed it from without. As to the danger of getting into industrial ruts, it appears to me, that there is much more danger of getting into academic ruts. If George Stephenson for example, had fallen into the hands of the professors at an early age, he might have got into a rut leading to pedantry instead of practice; but I know of no misleading ruts in the school of observation and experience. My critics do not dispute that George Stephenson's name stands out as a remarkable example of a man accomplishing great success without the aid of education; but many of them exclaim, where is the proof that he would not have achieved greater success if he had had the advantage of education? That he did achieve a great success without education, is a fact; that he would have done more if educated, is only an hypothesis, which is counter-balanced by the opposite hypothesis that he might have done less. Sir Lyon Playfair makes an important admission, when he says, that possibly 'technical education' may contract 'originality and power of work.' I not only think it may, but that it does, when it assumes the form of cramming, for it is easy to put out fire by too much fuel.

He remarks that Robert Stephenson's education was a general, not a special one, and that his father, the great George Stephenson, so felt the lack of his own general knowledge, that he was earnest to secure such for his son, with reference however, to his social status, not to his professional needs.

Lord Armstrong then considers the arguments of another disputant as follows:

> In *Blackwood's Magazine* for March, last, there is an article by Professor Ramsay, who is one of the governors of the new Glasgow Technical College, which I had not seen at the time that I wrote my paper. Had I seen it, I should probably have referred to it, as it takes a much more limited, and in my opinion, more rational view of the need of education applicable to productive industry, than is held by Professor Playfair. I have pleasure in referring to that article now, not only because it is to a considerable extent in harmony with my opinions, but because it enables me to point out the wide divergence of view which exists amongst the distinguished advocates of technical education. Professor Ramsay altogether ignores Professor Playfair's contention, that either technical or scientific education is needed for the multitude, and he takes the much more reasonable ground that it is only required for specialists and experts. The first portion of his paper is devoted to the inquiry as to the extent of the alleged superiority of foreign manufacturers, and after adducing a great number of examples of our indisputable supremacy, he arrives at the conclusion, in which he is supported by weighty authority, that, so far from its being true that our foreign rivals are gaining upon us, we are, on the whole, gaining upon them.
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> I now come to the second division of industries in which Professor Ramsay considers we are distanced by foreign nations, *i. e.* those in which success depends essentially, upon taste and upon the faculty of design. There is no question, that half a century ago, or we may even say, prior to the Great International Exhibition of 1851, the English people were lamentably behind their French neighbors in taste for decorative art; but it is equally certain, that very rapid improvement has since been made, so much so, that, instead of being far behind the French, we are now pushing them very hard, and are, in some respects, ahead of them. This is not owing to a few schools of design being dotted about, as Professor Ramsay would fain believe, but to the truer realisation by the English public, of what constitutes good taste. Our manufacturers merely *follow* the lead of the *public*, and find themselves compelled to supply what the public demand. In fact, in matters of taste as well as everything else, supply will always follow demand.
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> As to what Professor Ramsay says on the expediency of making drawing a prominent object of education, I quite agree with him.

After characterizing the saying that "knowledge is power" as often untrue, and affirming, that "useless knowledge,—which is no uncommon article in our popular schools, has no relation to power," he proceeds:

> And here I am brought back to the keynote of my former article, which was, that a man's success in life depends incomparably more upon his capacities for useful action, than upon his acquirements in knowledge, and the education of the young should therefore, be directed to the development of faculties and valuable qualities, rather than to the acquisition of knowledge. None of my critics have touched upon this cardinal point, and I suspect they fear to do so, being aware as everybody is, that men of capacity, and possessing qualities for useful action, are at a premium all over the world, while men of mere education are at a deplorable discount. It is melancholy to know, as I do from experience, how eagerly educational attainments are put forward by applicants for employment, and how little weight such claims carry in the selection. I can affirm with confidence, that had I acted upon the principle of choosing men for their knowledge rather than their ability, I should have been surrounded by an incomparably less efficient staff than that which now governs the Elswick Works.
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> Nevertheless, I do not disparage knowledge; but on the contrary, I respect and value as highly as any one, the vast store of human thought and experience which is embedded, and sometimes entombed in print, and the useful part of which, is accessible to all through cheap literature and libraries. But that store of knowledge, valuable as it is, to those who seek it for an object, and desirable as it is to those who pursue it for the laudable purpose of mental improvement and intellectual occupation, has no benefit to confer on unwilling or incapable recipients, and I am afraid, it must be confessed, that its economic value in the ordinary vocations of life which give employment to the multitude, is extremely small.

THE WISDOM OF TAKING PATTERN FROM GERMANY SERIOUSLY QUESTIONED.

But, when I say this, I am met by a chorus of voices exclaiming, "Look at Germany, and see what great efforts she has made and is still making, to promote education of all kinds," and we are called upon to follow the example of that country or face the alternative of losing our trade. But I look in vain for any proof that our commerce has yet suffered from the high-pressure education of Germany, and until such proof be forthcoming, we must be cautious in deciding whether her example is to be regarded as one for guidance or avoidance. The German people are far from unanimous in favor of this educational pressure. I know for a fact, that many competent judges in the country are regarding it with disapproval, and are dreading its effects. They say, as I do, that it is thrown away upon the mass of the population, and is at the same time debilitating both mind and body, by the overstraining of the faculties. From this, they apprehend not without reason, a degeneracy of race which would far outweigh the advantage to be gained by the spread of knowledge. Let us give heed to these reflections. This forcing system is gaining ground in our popular schools. Examinations are growing more severe and more extended. Mothers complain of their children returning from school with aching heads and puny appetites, while ratepayers groan under educational burdens for which no adequate benefits can yet be shown.

WHY SHOULD NOT THE "INDUSTRY" OF TEACHING HAVE THE BENEFIT OF TECHNICAL TRAINING?

I confess, I cannot understand how it is, that Sir Lyon Playfair, while urging the claims of such trades as tailors and brick-layers to technical and scientific education, should be silent on the claims of that great industry with which he is himself associated, and which more than almost any other requires an intelligent knowledge of the science and art which lie at its basis. I mean the great industry of teaching. How is it, that tuition is not reduced to a science, and its technical processes made to conform to a scientific basis? If it were so, its present crudities and anomalies would vanish, and education would become what its name implies, a drawing out or development of mental faculties with the least possible waste of energy, and with concurrent advantage to physical powers. We have already in our infant schools, a model to commence upon. In them, the faculties of the children are stimulated by exercises suitable to their age and compatible with health and enjoyment. Why should this principle be abandoned before childhood ends? Why not elaborate the mental and bodily exercises so as to keep pace with the growth of the organization, without losing sight of the leading principle of development? I admit, that the programme for so doing is not an easy one to frame; but there must be a right answer to the question of what methods would best attain the objects which I have defined in my former page, *i. e.* "to train the mind in habits of thought, and in quickness and accuracy of perception. Also to make the hand, the eye, and the ear more available as instruments of the mind, and finally to improve the physique." But no answer to this question is forthcoming, and never will be, until the matter be taken up in a scientific spirit and investigated by scientific methods which would embrace both physiological and psychological considerations, and involve experiments and trials.

CRAMMING THE ONLY RESOURCE OF THE EDUCATORS.

But nothing of this sort is attempted by our educational experts. We hear of nothing but cram, and are dinned with the cry for "higher education," which in professor's language, means more knowledge, although, knowledge in itself, is already a drug in the market. In the meantime we are violating nature's laws by overstraining the immature faculties of children, and restricting their natural activities, and by so doing, we are likely to bring upon us, the penalty of deterioration of race. Of course, I recognize the need of imparting what may be called necessary knowledge at school, such as reading, writing, and arithmetic; but the word knowledge is hardly applicable to these, which merely afford enabling powers of self-instruction.

ELEMENTARY DRAWING AND SCIENCE STUDIES DESIRABLE.

If drawing and other useful accomplishments can be concurrently acquired, so much the better; nor do I deprecate rudimentary science sufficient to awaken in superior minds, a desire for more, but the great object of school education should be, development of qualities and character, and also preparation for the practice of self-education.

THE SCHOOL-MASTER'S PROVINCE SHOULD END WITH CHILDHOOD.

The school-master element is indispensable for children; but after childhood, the less we have of it the better. Men should not be carried when they can walk, and independence of mind and freedom of action, are essential to vigorous and manly life. Self-education may consist either in the acquisition of ideas which flow from observation, experience, and thought, or in the appropriation of ideas emanating from the minds of others. The latter is a form of education that will be little sought for by the multitude. Facilities, however, should be given for those who need it or seek it, and it is an important question to consider, whether the existing facilities are sufficient for the purpose. I need not repeat what I have said in my former article on this subject; but I certainly think, that no very ambitious extensions are necessary, and that additions should not outrun the demand for them.

EDUCATORS APT TO UNDER-VALUE THE WORTH OF SELF-EDUCATION.

There is a great tendency in the scholastic world, to under-rate the value and potency of self-education, which commences on leaving school, and endures all through life. If I may be excused the parody, I would say:

> All the world's a school;
> And all the men and women merely scholars.

In the foregoing remarks, I refer more especially to popular schools where the exigencies of life require that the children should leave school at an early age; but where circumstances admit of lengthened education, knowledge may be more freely imparted, although in all cases, the present craze for cram and severe competitive examinations, is in my opinion, very reprehensible. The system has had a fair trial, and no results can be shown to justify its continuance.

THIS ARTICLE IS LIMITED TO A CONSIDERATION OF THE DIRECT UTILITY OF SCHOOL TRAINING.

I must again protect myself against the charge of looking only to education in the aspect of utility. I have done so, not from indifference to the moral object of education, but because it is no part of my subject. Moral teaching and religious teaching are difficult to separate, and the best school for both is a virtuous home; but unfortunately, homes of that character are not of the prevailing type. The difficulty of finding a substitute for beneficent home influence is, I confess, very great, and I do not know that much better can be done than to leave the matter as it stands. One thing I may put forward as a hint emanating from my own experience during my school-days. The master of the school read every evening to his pupils for one hour from some well-chosen book of history or fiction, or travel, calculated to excite their interest and also to enlist their sympathies for what was good and their repugnance to what was bad. He read well, which greatly added to the effect, and served to improve our own ability to read. It was our happiest hour, and besides the salutary relaxation it afforded, it contributed in no small degree to the improvement of our moral taste and perceptions. This is one of the practices that might perhaps, be adopted in popular schools with a view to moral cultivation, and I doubt not, that other methods might be devised, that would operate in the same direction; but I must not pursue the subject of moral education further.

THE "POWER" OF KNOWLEDGE DEPENDS ON THE "CAPACITY" OF ITS RECIPIENT.

My subject is useful education, and my object is accomplished if I have succeeded in showing that there is a tendency afloat, to over-rate the value of knowledge, and to under-rate that of capacity. In the academic mind, the intellect of the people is regarded as lying dead for want of knowledge. I speak as one from the educationally dead, in saying, that I never had a scrap of instruction bearing on my profession, beyond what I imbibed for myself, and that I feel it has done me incomparably more good than if it had been administered to me. I repudiate the imputation of hostility to knowledge, or to giving facilities for obtaining it to those who desire to acquire it, and have capacity to utilize it; but I deprecate plunging into doubtful and costly schemes of instruction, led on by the *ignis fatuus* that knowledge is power. For where natural capacity is wasted in attaining knowledge, it would be truer to say that knowledge is weakness.

LORD ARMSTRONG SUPPORTS THE PROTEST AGAINST COMPETITIVE EXAMINATIONS.

Since writing the above, I have been requested, and have gladly agreed to sign a protest, which I understand is to appear in another part of this Review, against the mental pressure and misdirection of energies incident to the competitive examinations which pervade our whole educational system.

(d) THE SACRIFICE OF EDUCATION TO EXAMINATION.

INTRODUCTION.

The formal protest, which in the opening pages of "The Nineteenth Century" for November, 1888, precedes the article just quoted, fills six pages of text, followed by nearly fourteen pages of signatures; the fifteen pages which follow those, are given to the articles by the three professors already named. There is also a page of "recommendations" asking for a Royal Commission "to consider the whole subject of official appointments by examination," and that the universities and other large educational institutions appoint committees to fully investigate the whole question of examinations. All the foregoing pages are included under the general title here given.

From the formal protest, which opens with a strong statement "against the dangerous mental pressure and misdirection of energies and aims which are to be found in nearly all parts of our present educational system," the following paragraphs relating to examinations for government positions, are taken:

A PROTEST AGAINST COMPETITIVE ENTRANCE EXAMINATIONS FOR GOVERNMENT POSITIONS.

> We protest against the assigning of Government positions by competition,—a system which sets an evil example throughout the country, and which does not ensure the choice of the most fit. That the Government should require a high class of knowledge and attainment from those seeking for its appointments, is reasonable; but the difficulties which attend the selection of candidates should not be allowed to bring upon us in wholesale fashion, (though indirectly) the great evils which result from competitive examinations. It is urged—and the whole matter deserves serious consideration—that it would be better that some system should be sought out, under which, for example, those who wished to enter the Civil Service, and who reached a certain standard of excellence, required by the Commissioners, should be practically tested in such way and for such period as could be conveniently arranged; that the most fitting should then be selected on public grounds by the permanent Heads of Departments. It is urged, that some such a course—and others are to be suggested—should be preferred to the excessive and hurtful stimulus of special training for the one purpose of defeating in a great educational contest, other candidates, also specially trained for the same purpose, and to the consequent encouragement of competitive examination throughout the whole country by the force of Government example. Here also, we desire simply to point out how important it is, that those who are most qualified, should turn their attention to this subject with the view of discovering the best way of avoiding both the evils that belonged to the past, and those that belong the present.

Professor Max Müller, premising that forty years ago he urged this system, says he signs the protest with no light heart; he still thinks it better that the method of Government appointments be thus made, than to be made as they were before; but he pictures the great evil resulting from this modern multiplicity of examinations, and says, "The mischief done, is, I believe, most serious. It will poison the best blood of England, if it has not done so already."

Professor Freeman, the distinguished historian, says: "Now what has come of all this? Simply the degradation of university learning and teaching into a trade." He shows the deteriorating influence on both students and tutors, and says:

> Every examination is in itself, an evil, as making men read, not for the attainment of knowledge, but for the object of passing the examination, perhaps of compassing its "pecuniary value."

Professor Frederic Harrison, the well-known writer and publicist, considers the subject at length, more especially, in reference to the higher education and Government appointments. In regard to the latter, his remarks were quite as applicable to the American as to the English situation, when he says:

As a rule, I think people whom we trust to govern, must be trusted to select capable agents. If we cannot trust them to do this, let us not trust them to govern us. If examinations are required to restrain jobbery, I prefer to deal with the jobbery face to face, and by direct means, and not to pervert all public and private education, in order to check-mate the wicked jobbers, and reward the best crammed ones.

* * * * * * *

COMPETITIVE EXAMINATIONS ARE AS INJURIOUS TO THE TRUE INTERESTS OF EDUCATION AS IS PROFESSIONAL BETTING TO THE TRUE INTERESTS OF MANLY SPORTS.

Art, learning, politics, and amusement, are deluged with shows, races, competitions and prizes. Life is becoming one long scramble of prize-winning and pot-hunting. And Examination, stereotyped into a trade, is having the same effect on Education, that the betting system has on every healthy sport. I do not deny, that teachers may usefully examine their own students as a help to their own teaching. I do not say, there may not be one public and formal examination in any prolonged educational curriculum. My plea is against that organised, mechanical, incessant, professional examination, by which, education is being distorted, and the spirit of healthy learning is being poisoned.

Examination, like so many other things, is useful as long as it is spontaneous, occasional and simple. Its mischief begins when it grows to be organised into a trade, and the be-all and end-all of its own sphere. The less the student be prepared in the technical sense, the better. The more free the examiner be to use his own discretion with each examinee, the more likely he is to judge him fairly. It was so once. All this is now changed in the thirty or forty years since the examining mania set in. The myriad examinations which now encompass human life, have called out an army of trained examiners who have reduced the business to a complicated art as difficult and special as chess. Like chess-playing, the art of examiner and examinee, has been wondrously developed by practice. The trained examinee has now learned to play ten examination games blindfold. He can do with ease, what the most learned man of the old school could not do. Gibbon would be plucked in the Modern History School. Arthur Wellesley would never get into the army. And Burke would have got low marks, through not apportioning his time to the various questions in the paper. I seriously doubt if many of our great scholars, our famous lawyers, historians and men of science, could "floor" offhand, a high-class examination paper. They would not put their knowledge in the sharp, smart, orderly, cocksure style which so much delights the examiner. They would muddle the relation of the *shire-moat* to the *hundred-moat*, or they would forget the point in *Smith v. Jones*, or they might differ from the examining board as to the exact number of the *Isomeric Amyl Alcohols* now known. All this, your trained examinee, well nursed by thorough crammers, has at the tips of his fingers. He "floors" his paper with instinctive knack—seeing at a glance, how many minutes he can give to this or that question, which question will "pay" best—and trots out his surface information and his ten-day memory in neat little pillets, beautifully docketed off, with 1, 2, 3, (α) (β) (γ), the five elements of this, the seven periods of that movement, and the wonderful discovery (last month) of a new reading by Professor Wunderbar.

He thus returns to the topic of Examinations as tests of fitness for Government positions.

Any sensible man who wanted to engage a confidential Secretary, or a literary assistant, or a man to send on some responsible mission, would not trust to a mark-sheet, so mechanical, so hurried. He would see each candidate once or twice alone, for an hour or two, talk quietly to him, get him to talk quietly, leave him to write a short piece, set him to do a piece of actual work, try him backwards and forwards in spontaneous unexpected ways, as the quality of each candidate, seemed to suggest. He would not burden himself with more than four or five candidates at a time. At the end of a week, a sensible man could perfectly make up his mind which of the four or five, was the best fitted for the particular work required, and he would almost certainly be right. Nothing of this is possible. in the official Examination. The rules are stricter than those of a prison. There is absolutely no "discretion." Discretion might let in the demon of Favouritism. The candidates are often numbered and ticketed like prisoners, to avoid the disclosure even of names. The precise number of papers is prescribed, and their preposterous multiplication leaves the examiner about one minute for each page of manuscript. With one or two hundred candidates to get though in a week or ten days, the examination is really like the inspection of a regiment. The uniform and accoutrements must conform to the regulation standard. * * *

He then shows how this requirement has developed a class of special crammers to prepare pupils for these examinations; and how far all this is from true knowledge, and how deceptive *it must needs be*, as to the real capacity and fitness for future usefulness, of the candidates examined.

The system of publishing examination papers, and close study of the questions over many years, have taught a body of experts to reduce, classify, and tabulate these. So many become stock questions, so many others are excluded as having been set last year, etc.; and in the result, a skilled examinee, and still more, a skilled crammer can pick out topics enough to make certain of passing with credit. Knowledge as such, and knowledge to answer papers, are quite different things. Student and examinee read books on quite different plans, if they wish to gain knowledge, or if they are thinking of the examination. The memory is entirely different. The examinee's memory is a ten-day memory, very sharp. clear, methodical for the moment. like the memory cultivated by a busy lawyer. full of dates, of three different courses, of four distinct causes, of five divisions of that, and six phases of the other. It is a memory deliberately trained to carry a quantity of things with sharp edges, in convenient order, for a very sharp period time. The feats which the examinee can perform, are like the feats of a conjurer with bottles and knives. The examinee himself cannot tell how he does it. He acquires a diabolical knack of spotting "questions" in the book he reads. He gains a marvellous *flair* for what will catch the examiner's attention. As he studies subject after subject, his eye glances like a vulture on the "points." Examination is a system of "points." What has no "points" cannot be examined. Many able and industrious students do take the trouble to acquire this *flair;* some will not, or cannot acquire it. But certainly, a good many acquire it by an outlay of labour or money, who are neither able nor industrious at all. * * *

The examination, thus made the "fountain of honour," governs the whole course of study. If the teacher takes up a subject, not obviously grist for the great mill, the student ceases to listen, and leaves his class. The instant he says something which sounds like an examination "tip" every ear is erect, every pen takes down his words. The keen student of to-day is getting like the reporter of an evening journal: eager after matter that will tell, will make a good "answer," capital examination "copy." The mill governs the whole period of education, from *hic, haec, hoc*, to the final launch in a profession. I know little boys of ten, in the *ego et Balbus* stage, who are being ground in printed examination papers which I could not answer myself. And big men, older than Pitt when he governed England, or Hannibal when he commanded armies, are still ruining their constitutions by cramming up analyses, and manuscript "tips" of great "coaches." The result is that poor little urchins in frocks are in training for some "nursery stakes," as an old friend of mine used to call the trials of preparatory schools. The prize school boy who sweeps the board on Speech-day often gets a perfect loathing for books, and indeed for any study that is not "cramming"; and the youth who leaves his University, loaded with "Honours," may prove to be quite a portent of ignorance and mental babyishness. He has learned the trick of playing with a straight bat the Examiner's most artful twisters. But he cannot bear the sight of a book; and like any successful speculator, he has a hearty contempt for knowledge.

It is hardly to be supposed that the matter will be permitted to rest with the publication of the "Protest" and the accompanying statements. Indeed, the managers of the Review, in publishing these articles, doubtless anticipate a lively and interesting discussion of the several questions so definitely raised; as there is no doubt that the advocates of the system of examinations will have much to urge on their part; while, if it is true as alleged, that the system has developed a special class of private tutors known as "crammers," *they* may be counted on to come to the rescue of their threatened professional interests; for, as once of old it was with Alexander the Coppersmith, so now, their "craft" is endangered.

As the opening of this discussion finds place here only incidentally, in connection with the second article by Lord Armstrong, those who are interested in its further development will seek for it in the pages of succeeding numbers of the Nineteenth Century; doubtless, also, the discussion will find place in other English Reviews and Educational Journals.

APPENDIX O.

PAPERS
RELATING TO
THE INDUSTRIAL TRAINING
OF
GIRLS AND WOMEN
IN
SOME EUROPEAN COUNTRIES,
AND TO
MANUAL TRAINING IN FRANCE.

I. Introduction.
II. "Technical Training for Girls"—Brief accounts of Schools in France, Belgium, and Germany. (Fraser's Magazine, March, 1879.)
III. Cooking Schools as discussed in England. (Health Exhibition, London, 1884.)
  (*a*) "Practical Cooking in Elementary Schools," by Miss Fanny L. Calder.
  (*b*) Discussion of Miss Calder's paper.
IV. The Practical Training of Girls in Belgium.
  (*a*) Report on the Teaching of Domestic Economy and Needlework with progamme of courses of instruction by V. J. Germain, Director-General of Primary Education in Belgium.
V. A Brief Outline of the present status of Manual Training in France: from a paper by the late M. Salices, Inspector General of Manual Training. (1889.)

INTRODUCTION.

The three following papers in this Appendix contain a concise account of the efforts made in several European countries to give to girls definite industrial training; designed in general, as it appears, for the direct teaching of a trade or employment, rather than undertaken in accordance simply with the principles of pedagogy.

These are accounts of practical attempts to train women to industrial employments.

The first, from an article in an English Magazine, gives a cursory view of several institutions in continental countries.

The two succeeding papers, abstracts from the printed reports of the remarkable "Health Exhibition" which was held in London, in 1884, and of the proceedings which took place in the series of "Conferences" held in connection with it, form a part of one or two of the many volumes issued by the authorities in charge of this unique Exhibition, in which are collected the papers read, with a concise report of the discussions which followed such reading; in which educators and specialists from many countries freely participated. The topics are the same which now occupy the attention of American educators, and it is believed the material here provided will be found of interest and value.

The final paper, which comprises extracts from the memorial tribute to M. Salicis, the late Inspector-General of Manual Training in France, prepared by Dr. Nicholas Murray Butler, and the "Monograph," by M. Salicis, entitled "Manual Training in France," both published by the New York College for the Training of Teachers, contains an interesting summary of the work accomplished by this distinguished educational reformer, so recently deceased; whose initial experiments in the municipal school of the Rue Tournefort, Paris, attracted the attention of progressive educators the world over.

The "Monograph," by M. Salicis, which records the methods and results of this school experiment for a period of sixteen years, and, also, recites the steps by which the innovation has been introduced into all Government Normal Schools throughout France, and its Colonies, is full of encouragement and suggestions of value to all advocates of this modern movement for the promotion of manual training and industrial education.

The criticisms of the official programme, the knowledge shown of child nature and of the laws of natural development, and the general outline of the progressive studies as arranged for the pupils, girls and boys, from early childhood, will be found of practical value; while the stress laid upon the teaching and practice of drawing and modelling, throughout the entire continuance of school life, is noteworthy.

II.

TECHNICAL TRAINING FOR GIRLS.

BRIEF ACCOUNTS OF SCHOOLS IN FRANCE, BELGIUM, AND GERMANY.

In an article with this title, which was published in Fraser's Magazine for March, 1879, over the signature B. T., the need of such training for women workers which, it was said, had only recently been recognized in England as desirable for male artisans, was pointed out; and the fact that such special schools were in successful operation in several countries on the Continent was emphasized. The descriptions of these schools are here quoted as offering suggestions for those busied with the like problem of how best to advance the technical training of American girls. On the whole the author decides that, in the then state of general elementary education in England, which is contrasted very disadvantageously with that of Germany, "the French system, according to which the girls enter the trade schools young, and their tuition in general subjects is continued, supplemented by technical preparation, offers special advantages."

In connection with the subject of "trade schools," these schools for girls, some of which partake largely of the character of "trade schools," form an interesting study.

TECHNICAL SCHOOLS FOR GIRLS IN FRANCE.

In France the movement dates from sixteen years ago, when, attention having been drawn to the subject, the first school offering technical education to girls was started in Paris by subscription. In a year's time it became self-supporting. In two years it numbered 150 pupils. It was enlarged and re-enlarged and gave rise to many dependencies both in Paris and other large towns. The applications for admission soon became so numerous that it was found necessary to introduce a system of selection by competitive examination. That this and numbers of such institutions, resting similarly on a sound commercial basis, not a charitable one, have achieved a signal and permanent success is now past dispute. Perhaps a sketch of the leading regulations of one of these "Ecoles Professionnelles pour les jeunes filles" will give a clearer idea of their exact nature.

"ECOLES ELISA LEMONNIER."

The particular example chosen is the "Ecoles Elisa Lemonnier," 31 Rue des Francs Bourgeois, 37 Rue de Laval, 70 Rue d'Assas, and 25 Rue de Reuilly. Pupils are admitted from twelve years of age. They must have already received a primary general education, which is continued in the technical school, and arranged with special reference to the industrial career for which they are intended. French, arithmetic, history, geography, elementary science in its practical application to common things, drawing, and writing are taught in the "general" classes, which occupy the morning hours. The afternoon each girl devotes to the study of the particular trade she means to adopt.

THE PARTICULAR AVOCATIONS TAUGHT.

The trade school referred to prepares pupils for any of the following avocations: Commerce, industrial design, millinery, wood engraving, china painting, artificial flower making, painting on stuffs. The course of preparation extends over three or more years, according to the particular study selected. The managing body are in communication with employers and manufacturers, and will undertake to make contracts for the apprenticeship of pupils who have completed their term. In some of these institutions arrangements have been made whereby the pupils are placed in workshops for a certain number of hours a day before leaving school, and thus carry on their education and apprenticeship at once.

The general instruction, as observed above, is so planned out as to work into and help the special; thus both go hand in hand to the exclusion of useless or irrelevant knowledge.

HOW GENERAL STUDIES ARE ADAPTED TO DEFINITE APPLICATIONS.

So in arithmetic the science of numbers is taught expressly in its practical applition to trade and accounts. In geography the commercial and industrial aspects of the different countries are not forgotten. Elementary physics and chemistry are taught in their direct bearings both on domestic management and the technicalities of special industries. Even writing is utilized, leading on to the tracing of ornamental letters, such as may be required in artistic design. The selection of subjects, the direction and the limitation of the knowledge imparted, are remarkable for the spirit of intellectual economy, so to speak, running through. A girl whose professional life is to begin at fifteen or sixteen can hardly be too thrifty of her scanty time and means for regular education. In England the fact that there are different degrees of usefulness in knowledge is apt to be needlessly ignored. Instruction is given much on the principle on which the famous old lady in the farce bought cheap goods at a sale—no matter if wanted or not, they might come in useful some day—a pair of crutches, for instance—how convenient, in case of accident, to have them ready for wear! Thus much well-meant labour is often virtually unproductive. Such schools, besides affording a valuable preliminary apprenticeship in the practical part of a profession, secure to the scholars some knowledge of the *rationale* of their trades, which in too many instances they may find but little time to study when once their actual apprenticeship has begun. Thus girls are helped at at an age when they are unable to help themselves, and properly qualified for making the best of such openings as may fall to their lot as working women.

The pupil's fee,for attendance at the general classes in the morning, and any one of the special technical afternoon classes, is twelve francs a month. Admission to a technical class alone costs ten francs. That French parents are willing and find it worth while to expend thus much on the training of their girls, the popularity and spread of the schools amply testifies.

We need not dwell on other private institutions of the same kind in the same country further than to say that they are numerous, and the principles on which they are conducted generally similar. In one of them cooking is taught, and this branch of enterprise seems invariably to be attended with brilliant success. * * *

TECHNICAL SCHOOLS FOR GIRLS IN BELGIUM.

Let us now pass into Belgium, and glance at the Ecole Professionnelle, Rue des Marias, Brussels, founded in 1865. It was started by subscription, but has since been subsidized by the Belgian Government. It is managed by a committee of subscribers, numbers three hundred pupils, and is reported as being in a most prosperous condition. The general plan is very much on the French pattern. Primary education is here continued; and we find the elements of natural history, natural philosophy, the chemistry of common life and domestic economy taught in the general classes. The cultivation of a girl's intelligence is thus cared for, and goes along together with a thorough technical preparation for a certain trade. She is familiarized in some degree with her business, before becoming dependent on it for her own living. The group of special courses is everywhere nearly the same. Girls in this school can be trained for commercial situations, as clerks and bookkeepers. Industrial design is taught—chiefly as applicable to dress-making—china painting, fan painting, etc. The girls here obtain a very high degree of skill. It is a matter of fact that most of these feminine handicrafts—an essential point of difference between these and others—can be thoroughly and practically learnt in the workshops attached to a school. The girls at the Brussels Ecole Professionnelle make some of the best dresses for the court balls, and specimens of their work have repeatedly won prizes and honorable mentions at different international exhibitions.

TECHNICAL SCHOOLS IN GERMANY,—THE LETTE VEREIN OF BERLIN.

In Vienna, Munich, Darmstadt, and other continental towns will be found institutions of a like kind, all of which have sprung into existence of late years, but have not long kept their well-wishers waiting for success. Perhaps the most remarkable is a branch of the Lette-Verein of Berlin, a society that offers to students of this subject a model of a technical school, judiciously organized so as to suit the special social conditions around it, and with capabilities for wider development which are already in active exercise.

The association to which it belongs was founded some twelve years ago. It was wisely agreed to aim at adapting the new establishment to existing institutions, overthrowing nothing; not creating a school for future, more highly educated generations, but to supply present wants. The success of the undertaking has been uninterrupted, and it has received the support of the most influential members of society, beginning with the Emperor and Empress. From the first it has owed much to the substantial aid and personal interest tendered by the Crown Princess.

THE LETTE-VEREIN.

The Lette-Verein is a handful of societies, all closely knit together, located in the same premises, and with the same main object, namely, the promotion of women's education, the improvement of the working capacities of those who are self-dependent. Thus, besides the trade school, there is the Victoria Stift, a foundation offering a temporary home to ladies of limited means; a bazaar for the sale of work; a registry for women in search of employment; a loan society; a lending library, and, quite lately, an additional school has been opened for servants, factory girls, and others desirous of self-improvement.

TECHNICAL CLASSES.

But here we have only to do with the admirable technical classes, as the leading, and for us the most instructive feature of the institution. The school—which is managed by a special committee of ladies and gentlemen, appointed by the general managing committee of the Lette-Verein—is in three divisions: commercial, industrial, and drawing. The girls do not enter under the age of fifteen, and here receive merely a technical, not a general education. The explanation of this important point of difference between it and the French and Belgian institutions must not be overlooked.

PUPILS IN GERMANY ARE WELL TAUGHT BEFORE ENTERING THE TECHNICAL SCHOOLS.

The education of children of all classes in Germany is better cared for than in any other country; the standard in the elementary schools is very high; the girls do not leave so early, thus general ignorance and want of trained intelligence are not among the obstacles to progress there to be contended with. Would that as much could be said for England; but it had best be borne in mind that of such a desirable consummation there is no immediate prospect. Many are of opinion that it is only the low state of elementary education in England which causes the technical schools to be felt or fancied at all; and that, when the standard of the former shall have been raised throughout the country, the intellect of our future artisans having thus been duly cultivated, they may safely be left to pick up their trade in the workshops. It is significant that in Germany, where the masses receive a far higher education than can fall to the lot of our own people for several generations to come, these intermediate institutions, offering good technical preparation for trades, so far from proving superfluous, should have found a field for great and fruitful labour.

THE SCHOOL FOR COMMERCE.

For admission to the School of Commerce division, girls must be able to prove that they have previously had a good general education. They here receive special training that will thoroughly qualify them for situations in mercantile houses. The pupils' fees are 7*l*. 10s. a year, the classes are in the morning, and occupy 20 to 23 hours a week. The principal subjects are: Mercantile handwriting, mercantile arithmetic, office work, and commercial correspondence, bookkeeping, commerce by bills of exchange, etc.; French and English, German, geography.

At a recent examination some of the pupils acquitted themselves so well that certain heads of mercantile firms who were present at once offered them engagements in their business establishments. In general the girls, on leaving the *Handelsschule,* obtain good situations as clerks, cashiers, correspondents, and so forth.

THE DRAWING SCHOOL.

The drawing school is in two divisions; one of these is expressly for the training of drawing mistresses for similar schools in the country, the other gives art instruction with special reference to certain branches of industry. The fees are 30s. a quarter, and the studies include linear and freehand drawing, geometry, colouring, ornamental design, flower-painting, china-painting, and modelling.

THE SCHOOL FOR TRADES AND INDUSTRIES.

The industrial division of the school is, if we go by numbers, the most important, as the classes are attended by over 800 scholars. There are classes for dress-making, machine-sewing, the cutting-out of linen, the manufacture of artificial flowers, glove-making, millinery, and hair-dressing, and the monthly fees for instruction in any one of these departments vary, according to its nature, from twelve to fifteen shillings. Many of the pupils trained here are afterwards engaged as teachers in industrial schools in the country.

THE COOKING SCHOOL.

The Lette-Verein has also its cooking school. The pupils pay fifteen shillings a month for their lessons, and do the cooking for a restaurant for ladies attached to the building. * * * .

THE SCHOOL FOR TYPE SETTERS.

Last, but not least, there is a school for compositors, which, though in a different building, is an offshoot of the Lette-Verein, and under the management of the society. Candidates for admission must be sixteen years of age, have received a good education, and have sufficient means of support for the first six months, during which they earn nothing. After that time they are paid according to the normal German tariff. The school is in connection with a Berlin printing company, for which it works regularly. The best scholars earn from twenty to thirty shillings a week. The pupils are divided into three classes; those in the upper division are drafted off in turn into other printing offices, care being taken always to retain a certain number of expert hands. In 1877 there were thirty pupils in the printing school all girls of good position in life; daughters of landed proprietors, clergymen, doctors, schoolmasters, and government officials. The work has proved in no way detrimental to their health.

THE SITUATION IN ENGLAND.

If, after this brief glance abroad, we turn again to England, it must be with the wish that the educational necessities of the female industrial workers were more thoroughly and systematically met by existing institutions.

The Arts of Design are those best provided for. Even here it has been questioned whether the present machinery, however admirable for certain purposes, is the best possible for producing much direct practical effect in special departments. To many learners, knowledge imparted will never bear much fruit unless given with direct reference to the purpose to which it is to be applied. Training for definite occupations is still wanting; the missing link between general knowledge and technical performance—practical instruction adapted to the scope and the limits of special industries. * * * .

THE VALUE OF ELEMENTARY TECHNICAL TRAINING.

Now girls intended for industrial careers have for the most part so little schooling time to use or abuse, that it is futile and often impracticable that their studies should go beyond a certain point. The more need that, such as they are, they should be directed to the special purpose they will have to serve.

In conclusion, such preparatory schools are by no means in opposition to the apprenticing system in those trades where it is in force. They merely secure to the apprentice or beginner a chance, which may otherwise never be theirs to improve, of laying the foundations of future excellence. It stands to reason they will learn the practical part of their business better and quicker for having learnt science and skill in the school. If, in some trades, there is much that can only be acquired in the workshop, so, on the other hand, will the intellectual and practical training, in classes where the culture and advancement of the pupils are the only ends in view, supply advantages the workshop never can bestow.

Briefly, to girls intended for skilled occupations, it should be open to enter a technical school before embarking in their vocation as apprentices or otherwise. Schooling should not end there; but if it is put off too long the chances are that it will never be begun, or be pursued with the minimum of profit. It is lost labour to educate work-women who are too old to learn. But girls whose training has been steady and methodical will be anxious to continue their learning. To such, the evening classes for apprentices and advanced students—which may be in combination with the preparatory trade school, as in several foreign institutions—will be of most profit, and then we may look for a distinct rise in the quality of women's work, and the estimation in which, as work-women, they are held.

Is it too much to hope that something more may shortly be accomplished in this direction than has yet been attempted? That such schools, wisely organized and carefully managed, may be made self-supporting, has been sufficiently demonstrated abroad. * * * .

B. T.

III.

COOKING SCHOOLS AS DISCUSSED IN ENGLAND.

HEALTH EXHIBITION, LONDON, 1884.

INTRODUCTION.

In connection with the recent discussions by educators in Boston, Massachusetts, and in view of the interest which in various educational centres is beginning to be shown in the industrial instruction of girls, as well as in the movement for Manual Training for boys;—largely due to the success of the Boston experiments in the girls' classes for sewing and cooking, and to the remarkable evolution of the "Kitchen Garden" School of Miss Huntington in New York, the consideration given to the subject of cooking in the "Conference on Education" held in connection with the Health Exhibition in London in 1884, to which conference frequent reference has already been made in this Report, may be found suggestive.

A paper by Miss Calder, given in "volume XIV," of "Health Exhibition Literature" (see page 171 *et seq.*) "was read by the Rev. Canon Warburton."

From this paper and the Report of the Discussion which followed, the following quotations are taken. The paper was entitled—

(*a*) *PRACTICAL COOKING IN ELEMENTARY SCHOOLS,*

BY MISS FANNY L. CALDER, HONORARY SECRETARY, NORTHERN UNION OF SCHOOLS OF COOKERY; AND HON. SEC., LIVERPOOL TRAINING SCHOOL OF COOKERY.

At a moment like the present, when the cry of over-pressure in the schools is almost strong enough to arrest the progress of the great education wheel, a paper that ventures to lay a comparatively new subject before the public, and to press upon school managers its adoption in the Elementary Schools, may perhaps need to spend a few minutes in self defence.

The subject to be dealt with, viz, Practical Cookery in the Elementary Schools, cannot for one moment be called technical instruction, as it forms [or ought to form] a part of the daily occupation of the greater number of the women in the land, affecting their home-life even more than the "three R's and sewing," next after which Mr. Mundella places it in importance in the Code.

It seemed no mere coincidence, but rather a proof of the convictions of the day, that while H. R. H. the Prince of Wales was heading a Royal Commission to inquire into the condition of the houses of the poor, his brother, the late lamented Duke of Albany, in his last public speech, was advocating most earnestly and sympathizingly the adoption in our schools of Practical Cookery, as a subject well calculated to fit the growing generation to appreciate, and even enjoy, the house improvement which that Commission will doubtless shortly bring about.

WORDS SPOKEN BY THE DUKE OF ALBANY, AT LIVERPOOL.

On that last memorable visit to Liverpool to present the Scholarships of the Council of Education, H. R. H. also distributed to Elementary School girls the Cookery Certificates of the Liverpool Training School of Cookery; with these words to the

Council: "I come now to another point in your programme on which I am anxious to say a few words—I mean the help and encouragement which you offer to the teaching of cookery in elementary schools. * * * What I desire is to see cookery taught in the most ragged schools * * * this cookery of course should be of the simplest, plainest kind; but it should be such as to show that with the coarsest material and cheapest apparatus, a neat, clean and thrifty manager may set before a hungry man a meal which he may eat with pleasure, and with no need to resort to the public-house to wash down an unpalatable and indigestible mess. * * * I should like to see meals which are now mere scrambles becoming points of real family union, occasions for showing forethought, kindliness, and self-respect * * * and I think that if we can train the children early to see the difference between what dirt, and waste, and selfishness make of a poor man's dinner, and what thrift and care and cleanliness can make of it at the same cost, we shall be civilizing them almost more directly than by our sums or our grammar, and shall be taking in flank our great enemy drink—drink, the only terrible enemy whom England has to fear." There is a standard for the home-life.

CHILDREN OF THE POOR NOT OVER TAUGHT BUT UNDER FED.

Now as regards the children themselves, Mr. Mundella's reply to the cry of over-pressure was, that the children are not *over* taught but *under* fed. This speaks for itself. All who know the people at all, know well that in thousands of cases it is *not* poverty that starves the family, but the house-wife's ignorance of thrift, of sanitary laws, and of the art of providing, or of preparing, proper wholesome food. Instead of philanthropy helping to pauperize by *giving* food to poorly-fed children [or worse still, the State undertaking to do so], let efforts be directed to introducing into our schools a subject of instruction so valuable and important to girls, whatever their after-calling in life may be. And to judge by what has already been accomplished, we may confidently expect to find a very perceptible improvement in the phyiscal condition of our school children. To this end a great deal has been done by the Department Schools of Cookery have through years of experience worked out the problem of the introduction of Practical Cookery into the Elementary Schools; and our present purpose is to point out the simplest and most economical methods of doing so. For step by step the Committee of the Liverpool School of Cookery found out the hindrances and the difficulties in the way of the accomplishment of this object, and for several years have given their best attention to the elaboration of plans that might meet these difficulties—difficulties as to time, room, utensils, expenses, disposal of food cooked, Government grant, and distance from a centre.

It is probably known to all here, that up to 1883 cookery was taught under the head of Domestic Economy, but by theory, and from books only. The results were eminently unsatisfactory to all concerned. * * *

It will be seen that in the teaching of cooking as in the introduction of any new study into the school curriculum, the matter of prime importance is the securing of competent teachers, and that in this occupation special teachers are indispensable.

Efficient teaching is, of course, the first point, and managers and head-teachers all see the perfect impossibility (as a rule) of adding it to the duties of the school mistresses, whose time and strength are already fully taxed, and who by no means desire to take up this additional burden.

WHAT THE RIGHT TEACHING OF COOKERY COMPRISES.

The teaching of cookery is not simply the preparation of certain dishes, which might be shown by any ordinary cook, but includes much instruction on the nature and use of food, and in the difficult art of choosing suitable nourishing and at the same time economical articles of food, in order that the smallest incomes may stretch to meet the needs of even the largest families. Such instruction as will give the children an intelligent interest in the matter, so that, understanding clearly the true purpose of eating and what things serve that purpose best, they may eventually become thoughtful, thrifty, housewives or servants, not merely mechanical workers or unintelligent drudges.

TRAINED TEACHERS ESSENTIAL.

Of the training of teachers for this subject, a most important part of our scheme, we hope to speak at another opportunity, but teachers are specially trained for the work in elementary schools at some of our large Training Schools of Cookery, and diplomas of efficiency are awarded there.

A teacher can give two lession a day, *i. e.*, ten in a week throughout the school-year, and take several classes in one school, or single classes in several neighboring schools for the time required to make up the Government number of forty hours. Circuits are sometimes arranged for a six months' course, the teacher going from place to place every week, so that several towns can combine to share the expense of her services. The usual plan is to give one lesson a week of two hours' duration, so that the course is accomplished in twenty weeks, *i. e.*, a school half-year. The teacher's salary for the year or half-year is then divided between the schools according to the number of classes they have had.

SMALL CLASSES DESIRABLE.

It is very important that these classes should not be large, or the girls will not obtain sufficient practical experience to justify the terms of "Practical Cookery," and precious school-time may be expended with unsatisfactory results. In the printed plans which are here for inspection, it is recommended that a class should not consist of more than twelve, or at most fifteen, girls, that number being quite as many as even a good teacher ought to have under her supervision while they are themselves cooking; that, with the cleaning and putting away of the utensils used, being really the chief part of the lessons. [No assistant-maid is employed in these classes, as the girls are taught to clean everything and leave all in nice order.]

WHAT THE COURSE OF TWENTY LESSONS COMPRISES.

The twenty lessons comprise the elementary knowledge of the nature, use, and preparation of the various classes of food, as meat, vegetables, fish, soup, puddings, bread, and invalid cookery, with practice in the best and most economical methods of cooking them. The lessons are alternately demonstration and practice, that the faculty of imitation, generally large in children, may be called into useful exercise. At one lesson the children are shown the way, nicely and neatly, to prepare and cook certain dishes, at the same time explanation is given of the nature and use of the food then being dealt with, and they are questioned as to cost, time, and quantities.

DURING THESE LESSONS ALL THE ATTENTION IS GIVEN TO THE COOKING, NOTHING TO WRITING OR SPELLING.

A most important point to which I particularly wish to draw attention is that the recipes of all the dishes taught in these classes are printed in clear type, with the price of each ingredient and the cost of the whole dish. Every girl is supplied with a copy of each recipe to which she refers during the teacher's explanation, and being thus saved the waste of time and thought in writing and spelling, is free to give her whole attention to the teacher's instructions and *manner of working*. At the next lesson the girls cook those same dishes, with their recipes to refer to, and under the direction of the teacher, who generally finds herself fully employed in overlooking the practice work of twelve or fifteen girls. They work to gether in sets of three, and take it in turns to do the cleaning, which is almost as important as the cooking itself, cleanliness and neatness being essentials to good house-keeping.

IMPORTANCE OF THESE LESSONS RECOGNISED BY THE DEPARTMENT.

But how are the forty hours to be found when the timetables are already so crowded? Experiences differ, but the greater number of schools seem to take a portion of time from advanced arithmetic, grammar, or drawing, a plan fully in accordance with the opinion of the Department, that "after the three elementary subjects and sewing, *no subject is of such importance* (as cookery) *for the class of girls who attend public elementary schools*, and lessons in it, *if properly given*, will be found to be not only of practical use, but to have great effect in awakening the interest and intelligence of the children." And so in fact it has already been found, and the children wake up to the advantages of head knowledge by being thus called upon practically to apply it. During the lessons the children receive marks for work and attention, and at the end of the course go through a verbal and practical examination, for which certificates are awarded by the Liverpool School of Cookery. If through illness or other cause any girl should miss one or more lessons of the course, and so have failed to complete her forty hours, extra lessons can be given at special times on the omitted subjects. This whole plan has been found to work most satisfactorily.

COST OF THE MATERIALS.

The cost of the necessary amount of food cooked at these twenty lessons is something under £1, 17s. for the whole course. This is easily recouped by the sale of the dishes, either to the teachers, to the children, to the parents, or for the sick poor of the neighborhood. It is usually in great demand, and if in one or two cases the full amount has not been returned, there are others in which there is always a profit upon the sale. In the plans before the Conference the system is plainly set out, giving exact details for those who need them, while at the same time it is quite open to managers to change the dishes for others more suitable to their localities, or to the particular season of the year.

This detailed account of the methods and of their results is followed by practical suggestions as to rooms, utensils, varieties of cooking ranges, etc., all of which is omitted as not applicable to the circumstances existing in this country. The writer returns to the consideration of the importance of securing thoroughly trained teachers and describes the provision made for training them.

Now one word more. It is very important that the value of special training for cookery teachers should be brought before this Conference, as there is no point connected with the subject on which there is so much vagueness in people's minds.

The nature of the cooking instruction is so little understood, that it is generally imagined that a sensible, good cook, or a philanthropic lady, with a taste for housekeeping, will quite accomplish all that is needed, totally forgetting the vast difference that lies between *doing* work one's self and *teaching* others to do it.

In reality, special training, general culture, personal handiness and practice in the art of teaching are very important, we might almost say, absolutely essential, to make the cookery lessons efficient. The teaching of cookery, far from being a merely manual work, makes great demands on the general culture of the teacher. It includes much instruction in the use, nature and properties of the different kinds of food, and the dfficult art of choosing both nourishing and economical dishes, so that as much comfort as possible may be got out of the smallest incomes. Sick-room cookery, especially, is a branch most important to teach, being almost unknown amongst the people; and to teach it well requires, on the part of the teacher, a clear acquaintance with the elements of physiology, of hygiene, and even of chemistry.

WHY SPECIAL TEACHERS ARE NEEDED.

The grant is made by the Education Department on the condition that the lessons are *properly given*, which we take to mean, given by teachers who are qualified to do their work thoroughly. It is not sufficient to teach girls how to do things, but they should know the reason of all they do, and have such an intelligent understanding of the needs of the body, and the means of supplying these needs, as will enable them to avail themselves of every resource within their reach; and, if one accustomed article of food fails, to have the wit to turn to some other grain or vegetable equally nourishing, though different. We are frequently told that there is a vast amount of good, wholesome food wasted by our people, and many new things rejected from their ignorance of their nature, and how to make use of them.

All this instruction means a fairly broad education on the part of the teacher, with complete mastery of the practice of cookery, and the power of imparting this knowledge in a lively, attractive, and efficient manner. Experience shows that the more highly the student has been educated, the more general information she brings to her studies, so much the better cookery teacher she becomes.

The occupation is one which highly commends itself to well-educated persons from whose ranks it is most desirable the staff of teachers should be drawn.

It is also a work which requires a teacher's full strength and energy, and which, therefore, it is most undesirable to add to the present duties of our schoolmistresses, whose time and strength are already fully taxed. In the early days of this movement, when a large gathering of schoolmistresses was consulted on the advantage of introducing cookery into their schools, they all agreed that it was a most desirable subject to take up, but equally unanimously begged that no plans should be suggested which would require them to add cookery to their other duties. Of course there may be exceptional cases of schoolmistresses who would pass in cookery, and find time to give the lessons themselves.

But we advise very strongly that if the subject is to be taught efficiently, and to the satisfaction of Her Majesty's inspectors, the lessons should be given by special teachers, regularly trained in those schools of cookery where diplomas are awarded, and with particular regard to proficiency in teaching children of the working class. In this way only can managers feel assured that their children are taught to become thrifty providers as well as good cooks.

THE NORTHERN UNION OF SCHOOLS FOR COOKERY.

To secure a supply of such duly qualified teachers, the Northern Union of Schools of Cookery was formed in 1876. When it was ascertained that there was no probability of one good general standard of marks and requirements for diplomas being arranged for the whole country, several leading schools of cookery agreed to unite in a scheme for adopting a uniform method of training teachers, and to offer diplomas on such a thoroughly efficient basis that the public might always feel secure of good work when engaging a teacher holding one of them. As far as possible the same plans are followed in all the training schools of the Northern Union, due allowance being made for varying requirements of different localities, and the diplomas given after the training in the different schools are recognized as of equal value throughout the country.

TWO CLASSES OF DIPLOMAS.

There are two kinds of diplomas conferred by the Northern Union, one for *Teachers of Artisan Cookery* only, and one for *Teachers of all branches of Cookery;* and in each of these departments there are first-class and second-class diplomas. The fee for the course of training for the former is £7 7s., for the latter £10 10s. The standard for these diplomas has been purposely kept high, and it has proved not too high for the teaching provided in the schools of cookery, and whenever the system of the Northern Union has been carried out, it has been found most satisfactory.

LENGTH OF THE COURSE.

The training for a diploma of the Northern Union occupies from five to six months. After taking the different courses of lessons required for her own instruction, and having passed two theoretical examinations, the remainder of the student's time is employed in practising the art of teaching cookery, very special attention being given to qualify her to teach children in the elementary schools. If her specimen lessons satisfy the requirements of the committee, marks for efficiency in teaching are added to those already obtained for practice and theory, and all go to make up the diploma. Considerable time is given to the study of various standard books on science, food, and household management.

If cookery is to be taught in our elementary schools as efficiently as all the other subjects authorized by the Education Department, it should be by teachers trained for the work, and holding some diploma which will assure the public that they are properly fitted to undertake these classes. Some such diploma is the only test by which managers can judge whether a candidate for the post of Teacher of Cookery is at all equal to the work.

The reading of the paper was followed by a discussion, which was opened by Miss Robinson, who recited her experience in a country district, where were many difficulties unknown in towns and cities—first, in obtaining the necessary funds, then as to rooms, opportunities for getting provisions in variety and small quantities, etc., her report of what had been done and her statement as to the need of trained teachers are here given.

(*b*) *DISCUSSION OF MISS CALDER'S PAPER.*

Miss Robinson said, from considerable experience in connection with a Yorkshire district association for teaching cookery, she could endorse what had been said, and would explain the course they had pursued. The question, in the first place, was the kind of teaching, and from some considerable experience she was satisfied that no kind of elementary school teaching was of any value except practical teaching. Demonstration teaching awakened their interest, and made them anxious for further knowledge, but theoretical teaching alone was useless and failed to convey a really useful knowledge of the subject. Having decided that the teaching should be practical, Miss Calder had explained how simply and easily it could be given. * * * Twenty lessons were given, for these lessons the children paid one penny each, and those pence enabled her to pay every expense except the teacher's salary; the food that was cooked was sold, and she had a balance at the end of £3 10s. to the good. The children were practically taught to clean; they were worked in sets of four, and every one did something each lesson. They washed up, scrubbed the tables, and washed all the vessels, but did not scrub the floors, although they wished to do so. Attention was paid to the tasteful serving up of the food, and laying of the table, and they did not even grudge a little bit of parsley to make the dish look nice, because she wished them to be able to serve up a dish in their own homes, which should be not only palatable, but nice looking. * * * It was most essential to employ trained teachers; as for expecting any schoolmistress to take it up, it would be hopeless, though it was most important to elicit their sympathy. It would be no waste of time to give a course of lessons in the evening to schoolmistresses who liked to attend. * * * .

EDUCATION AND KNOWLEDGE DIFFERENTIATED.

Miss MAITLAND said the position she held in Liverpool was that of examiner of children in voluntary schools who took cooking lessons. It had been decided in Liverpool that the instruction given to the children should be strictly educational. In attending the various meetings there, she had been very much struck with the continued use of the word educational, and with the fact that in many minds education was confounded with knowledge, forgetting that all the knowledge given to children was useless, unless with it they also had education, which was the drawing out and training of their powers. It was no use pouring into them a continual series of facts, and stuffing their minds with knowledge, without drawing out the powers of their minds. They had, therefore, made a great effort in Liverpool that all their cookery teaching should be educational, and, in saying this, she might speak also for the Yorkshire school of which Miss Robinson had spoken.

KNOWLEDGE OF THE NOURISHING VALUES OF DIFFERENT FOODS MOST DESIRABLE.

Another point they were anxious about was that the children should be taught something about diet and dietaries. Every one who worked amongst the poor would agree that it was not only their ignorance of cooking, but their ignorance of the simplest laws of diet which caused so much suffering amongst them. There were many mothers in workingmen's families who, in times of difficulty and distress—hard times as they called them,—endeavoured to meet all the trials of their life upon a diet of white bread—it would be better if it were brown—and tea, when, of course, as every one there knew, there were many other more nutritious diets which would be no more costly. It was only ignorance which kept this going; and it must lead to a deterioration of the race if the mothers of workingmen's families lived on such diet. One word as to the teacher. In many people's minds there was an idea that any cook could teach cooking, and perhaps she could in a way; but she would ask the mistresses of middle-class homes, who knew what went on in the kitchens, whether that sort of thing was what they wanted to have perpetuated. The careless and needless waste, and rule of thumb operations which went on, were not what they wished to have taught in schools. She felt that this was a subject to be approached with great diffidence in a mixed assembly, because every man born considered himself a good judge of three things—of a horse, of wine, and of cooking—and no doubt that might be true; but with regard to cooking, she thought he was a judge rather of the results than the methods, and it was not possible for an inspector of schools—for after all Her Majesty's inspectors were but men—to be expected to understand all the details required in giving a lesson on cooking.

COMPETENT TEACHERS ESSENTIAL.

Mrs. ROWLAND WILLIAMS, of Liverpool, said that Miss Fanny Calder in her paper had spoken of the necessity of having efficient teachers of cookery, in order that the scheme advocated might be properly carried out. This was a most important point, and one which could not be too strongly insisted upon. Failure in this respect would be most disadvantageous to the advance of the subject and would tend more than anything else to throw discredit upon it. * * * .

By the *competent* teachers was meant a teacher who had been properly qualified for the practical work by having been trained in the most approved methods, and who had, at the same time, studied the elements of the different sciences which have a bearing upon cookery, so that she not only showed her pupils how to do the manual work, but was also able to explain to them simply and in an interesting manner the reasons for what they were taught to do. All this implied a great deal of education, and was quite beyond the sphere of the ordinary cook. They wanted women of education, and possessing general culture, to undertake the work. And it was a work which might very well commend itself to the attention of such.

THE NORTHERN UNION OF SCHOOLS OF COOKERY.

The questions of how cookery teachers were to be obtained, and how their competency was to be guaranteed, were so important, that she desired to bring before the notice of the Conference the association of schools known by the name of "The Northern Union of Schools of Cookery"—an association which had been set on foot for the express purpose of organizing good systematic teaching throughout the schools which formed the association, with a system of examinations to ensure its efficiency, and which formed a centre from which certificates and diplomas were issued to teachers so trained upon an acknowledged standard. No such centre had previously existed for the conferring, according to a uniform method, diplomas on teachers trained in local schools, and it was the felt need of this which gave rise to the association.

The Northern Union of Schools of Cookery, of which she had the honour of being President, held its first council meeting in Liverpool in 1876, and Liverpool continued to be the head-quarters of the association. The secretaries of and other delegates from the different schools formed the council, by whom the examiner was appointed, and other business transacted. Examination papers were forwarded to the local schools as required, and the examinations were arranged by the local committees by whom the papers were forwarded to the examiners. A uniform system of marks was adopted in the different practice kitchens, and the marks gained were added to those given for the theoretical examinations.

LENGTH OF COURSES FOR DIPLOMAS.

The course of training for a full diploma occupied from five to six months. There were two diplomas, the artisan diploma for teachers of artisan cookery, the fee for training for which was 7 guineas; and the diplomas for teachers of all branches of cookery, the training fee for which was 10 guineas. The training occupied from five to six months. The student was expected to study the elements of physiology, and to acquire at least such a knowledge of the structure of the human body and its functions as would enable her to teach her pupils what was needful for the building up and keeping it in health. She was also required to gain some knowledge of the chemistry of food, and of different food values as articles of nutrition, so that she might teach how, though incomes may be small, nourishing diets of great variety might be selected, and special care be given to cookery for the sick. Some knowledge of the laws of heat in their effect upon different substances was required.

TEXT BOOKS USED.*

Certain books were to be studied and attendance at lectures, and as much general culture as possible was recommended. The books recommended were:—"Food," by A. H. Church, M. A.; "Physiology" by D. M. Foster; "Domestic Economy," by C. T. Bartley; "Food and Home Cooking," and "Health in the Household," by Mrs. Buckton; and "Scholars' Hand-book of Household Management and Cookery," by Tegetmeier. The latter half of the time occupied in training was directed chiefly to acquiring the art of teaching, and especially the art of teaching children in the elementary schools. The students were required to give a course of practice lessons, and had also to give demonstration lessons in the presence of competent judges. Two theoretical examinations had to be passed, and there was a fixed standard of marks which must be gained for these, and also for work done in the practice kitchen, and for proficiency in giving lessons. The standard had purposely been fixed high, but not higher than the teaching given in the training schools warranted. And it would be possible to point to a number of teachers thus trained, and now holding diplomas, who would serve to prove the efficiency of the system.

* * *

IMPORTANCE OF A KNOWLEDGE OF FOODS.

Mr. W. **STEPHEN MITCHELL** said he was very glad to hear that the subject of practical cookery was more and more coming to include that of practical dietary as well, and he should like to elicit, if possible, some information as to the extent to which the practical teaching of dietary was carried on in schools where cooking was taught. * * * . As books had been mentioned, however, he would refer to Professor Michael Foster's "Physiology," a portion of Balfour Stewart's "Heat," and a portion of Roscoe's "Chemistry," all published by Macmillan, which might well be used together with practical teaching. He hoped to hear from some ladies present to what extent practical chemical demonstration was conjoined with the teaching of cooking, so as to enable the children to understand how the diet tables of the Science and Art Department had been arrived at, and how they were to be supplied to their every day wants. If this were done, there would be no such mistakes made as had been alluded to with regard to the use of bread and tea. Dr. Buchanan's report on the health of the operatives at the time of the cotton famine showed how people died, practically in consequence of attempting to live on such a diet.

IMPORTANCE OF EXACTNESS IN WEIGHTS AND MEASURES.

Professor **Garnett** said one of the conspicuous features of the Conference was that so much stress had been laid on the importance of accurate measurements, and there was no subject in which its importance should be more properly brought forward than that with which they were now dealing. There were many plain cooks who could seldom produce the same thing twice over with the same result, simply on account of the carelessness with which their measurements were made. You constantly saw directions in cookery books to take a cupful of this, and a tea-cupful of that, and a small piece of something else, and it was very important in teaching girls cookery that their attention should be called to the necessity of making accurate measurements of everything they handled. Surely there were recognized units of measurements which were adopted by engineers and commercial people which would be applicable to the kitchen too.

Miss **Robinson** said this point was very carefully attended to in all their lessons. No cookery could be satisfactory without exact measurements or weight. She always said, in giving a lecture herself, there was no royal road to cooking; they must take scales and measurements and go exactly to work, and be precise as to time also, or satisfactory results would never be attained. But as for teaching children chemical science in twenty lessons, it was utterly impossible. Teachers were taught the science of dietary, and endeavored to teach the children as much as they could comprehend, and those young girls, who came without any preparation in science, could only have a small amount of instruction given them. They were, however, taught what food was most nutritious, and what went to produce blood, and bone, etc., and the examinations at the end of the course showed that they understood it, and if questions were put on any former lessons, they could tell why and wherefore every ingredient was used.

TEXT BOOKS RECOMMENDED.

Sir **Thomas Acland**, Bart., M. P., said although he was only a man, and was therefore obliged to judge by that which was the bane of all teachers nowadays, results, he did wish to say a word or two on this matter. In the first place he hoped the ladies would forgive him if he said they had none of them yet mentioned what he believed to be the best book on the subject, viz., one written by Miss Guthrie Wright of Edinburgh, with the assistance of a physician and two chemists, the School Book of Cookery, published at one shilling, by Macmillan. Another valuable book was published by Allman, of London, for one penny, written by Miss Barnett, niece of Mr. Le Neve Forster, and officially connected with the School of Cookery. He had heard that lady teach in three places, and without any disrespect to men, he thought he had never heard any man teacher teach better than she did, if as well. She was put to rather a severe test too, because on the first morning she was taken out to her class she was told she was not to start with her South Kensington ways, but to go into a cottage where there was no stove, only a wood fire, and no saucepans, and there she was to cook a dinner. However, she showed a great deal of good temper, and paid those she came to teach the compliment at the end by saying that although she came to teach she must confess she had learnt a good deal. He had seen something of the cooking classes at South Kensington, and of what had been done by Mr. Leveson Gower, who, he believed, was a very good judge, and he felt very grateful for their efforts, but they wanted to bring the teaching of cookery close home to the cottages. In the country they had not the opportunity of going to shops and getting the snippings of the fowls, the trimmings of fish, and so on; they had potatoes, pigs, and their gardens, and once or twice a week, perhaps, they had a bit of meat. The labourers wanted to be taught not to waste that meat, not to burn it in the frying-pan, and it was extremely difficult to introduce systematic teaching of this cookery into country places in schools. The poor children in the country had great difficulties in the food question all the way through, and what they had to do was to teach them very simply how to make the best of small materials. He had seen this result come from the teaching of Miss Barnett, and the study of Miss Guthrie Wright's book, in a west country village, where oatmeal was never heard of, but where rice had been used for many years, being sold at cost price to the poor; it had led to this result, that the farmer's wives, and other persons in the middle ranks, were so thoroughly made alive to the difference between starch food and albuminous food that it was resolved at once to use Scotch oatmeal and split peas as well as rice, and in that village now, for the last three years, that oatmeal was largely used by sixty labourers' wives. That was a practical proof of what might be done by bringing the teaching home to the poor in the country. * * * .

Miss ROBINSON said: In mentioning the books for training teachers, she had simply spoken of those used in their own schools. They did recommend "Rudiments of Cookery, with some account of Food and its Uses," a little manual by "A. C. M."

Sir THOMAS ACLAND said: That in the book he had mentioned almost every book which had been named was included in a list recommended.

IN COOKING, THE COMMON PEOPLE OF THE CONTINENT COULD GIVE VALUABLE LESSONS TO THE ENGLISH PEOPLE.

Mrs. WEBSTER said: She had known a good deal of the teaching of cooking in the London Board Schools, having been a member of the Cookery Committee for some time, but there was one fault in the programme which she believed existed all over England, and it has not been alluded to, either in the paper or by any of the speakers, though Sir Thomas Acland had pointed out a kindred one. In what they were doing in teaching English girls to cook, the fault seemed to be in considering that English cookery was what it ought to be amongst the poor. They were accepting the miserable dishes and miserable style of cooking which had been hindering England for a long time, and were not making any attempt to introduce into English homes, not expensive cooking, but those common dishes which any one who had been much abroad and seen much of the working French women or Italian women, or the women of any country almost, except, perhaps, the Spanish, were familiar with. They made a good eatable dish out of materials which an Englishwomen would think of no use, and not only that, but would cook you, in some little dirty hovel where you did not think there could be any fit materials, a dinner which people, possibly having some knowledge of cooking and a refined taste, could eat, whereas they could not, in England, eat a meal given to them by the wife of a working man enjoying a comfortable income as good as that of any curate. She did not blame the Cookery Committee of the London School Board—she had been a member of it, and shared the responsibility if there had been any short coming—but there was some room for improvement, not merely in regard to cooking, but also in regard to dietary.

SUCH COOKING AS WAS WITHIN THE MEANS OF THE ARTISANS TO PROVIDE, SHOULD BE TAUGHT IN THE ELEMENTARY SCHOOLS.

Mr. BARROW RULE said: They had only heard of women cooks, though he had always understood men made the best cooks, but perhaps times were changing. * * * . The programme referred to the teaching of cookery in schools, but the general tenour of the discussion had referred simply to elementary schools, in which he certainly hoped that artisan cookery exclusively would be taught. Some few years ago in the district in which he lived they had had some experience of first rate cooking, they paid a handsome salary for a teacher of cookery, and she really did teach cookery, and all the pupil teachers were instructed how to make ices and all manner of very nice things, but it was found that they had not been taught in such a manner as to make them at all useful. If cookery were to be taught in the elementary schools, it must be artisan cookery, for two reasons: in the first place men would marry, or they ought to, and as the girls must be prepared to make good wives and mothers, they must be taught to practise cookery such as their husbands would be able to afford; they must not run to them for this, that, and the other thing out of their wages, because Miss So-and-so had taught them that those were the things to use. They must be taught to make good housewives in the position in which God had placed them, to avail themselves of the means their husbands could place at their disposal. There is danger of cookery becoming a hobby ridden to death, and perhaps ultimately excluded from the Code. With regard to teaching cookery in Board Schools, it would be no expense at all if they would only allow those teachers to give instruction who had obtained certificates. If the apparatus were found, the mistress herself would get all the materials, make them up, and then sell them to the children, keeping an account which could be produced when required. He hoped those who were at work in this matter would not attempt to run too fast at first and overset the coach.

THE COOKING OF SIMPLE FOODS TAUGHT IN LONDON BOARD SCHOOLS.

Miss DAVENPORT HILL said: she had much to do with the teaching of cookery under the London School Board, and should not like it to be supposed that they were altogether deficient in the knowledge of the properties of food, though they did not understand as she could wish; but she and her colleagues were always ready to learn, and try what they could do to improve the system. They were now beginning to train their own teachers in their cookery schools, which adjoined elementary schools, but stood by themselves in the play-grounds. The Board preferred taking pupil teachers, who, for some reason or other, did not wish to pursue their profession in an elementary school. They had learnt how to discipline children, which was very necessary; and after six months' instruction under a good instructor, and with attendance at a course of lessons in higher class cookery, they turned out very good teachers. No doubt, if the Board could impart some knowledge of chemistry, added to a little dietary, they would be glad to do so. * * * . Of course the Board did not think of teaching how to make ices. They confined themselves to common cookery simply. Mrs. Webster might be right, and they might improve their dishes, but they made them palatable: they taught how to warm up cold provisions, how to boil vegetables, how to cook meat in a tasty way, and they also insisted on cookery for the sick, which they considered most essential; how to make beef tea, mutton broth, gruel, porridge, &c., and how to make coffee. They were obliged to sell what they cooked; it was no use, therefore, to cook dishes which would not sell. The London School Board spent about £100 a month in mere food, an important item of expense. When they began, and for some years after, they lost money; but they were just now beginning to avoid loss, and they hoped by the end of this year the receipts would balance the outgoings. They were always striving to improve the mode of teaching as much as possible, and did not at all suppose they were yet perfect.

A TRIBUTE TO SIR HENRY COLE AS THE PIONEER IN INTRODUCING COOKERY SCHOOLS.

The CHAIRMAN (Colonel DONNELLY), in summing up the discussion, said he had had on occasion to cook his own dinner, which brought the fact very strongly home to his mind that if he had not been very hungry he might not much have approved it. At the same time he did not know that all men were to be considered to be ignorant of cookery, for they had heard of a *cordon bleu* among men; at any rate, if men were not so often cooks as women were, they all appreciated the result of the women's labour. It was really astonishing how little was done to put cookery on a rational footing in England, and very likely it came from the fact of our having such good meat, but the steps being now taken to teach cooking would no doubt, in time, bear good fruit. He remembered how a few years ago his old friend, Sir Henry Cole, advocated this subject, and how he was laughed at for so doing, but the result of his labours was now being seen, and it ought not to be forgotten that he was the originator of the present movement for cookery schools. He was very glad to hear what Miss Maitland had said, that the teaching of cookery should be strictly educational, and he concluded by proposing a vote of thanks to Miss Calder for her admirable paper.

PRACTICAL COMMENTS BY MISS CALDER.

Miss FANNY CALDER said: Two or three things had been said which she did not like to leave unanswered. To begin with the remarks of Mr. Rule, if he would look at the lists of what was taught by the Liverpool School of Cookery, he would see that the whole twenty lessons cost £1 17s. 10d., and he could not fear many ices or such high class dishes from that. As to gas stoves, they were extremely useful, and, in fact, cookery could not be introduced into some schools unless they were used. They never heard of any smell coming from them or any inconvenience. Sir Thomas Acland had spoken of the difficulty of getting school teaching into the country, but at the present time in the very heart of North Wales, at Festiniog, the course of lessons was going on. The mothers did not teach their children; they knew very little themselves, and never took any trouble to teach. She knew that in Wales, and other districts, where the children were taught cooking, they cooked the food at home, and the parents were very much pleased. These children mostly left school before they were twelve, and went out into the world, probably to become mothers, and they obtained much useful knowledge of how to make their homes clean, comfortable, and attractive, and how to make good use of the smallest amount of food which would come in their way. They did teach them how to use the simplest utensils, for, as she had said in the paper, they wished to make the smallest incomes stretch to meet the needs of the largest families, and therefore they must use very simple and cheap things. With regard to dietary, if any one would look at the plans and lists, and copies of receipts which were on the table, they would see the system adopted; every sort of food was represented, and the children were taught how they could supply one kind of food by another in times of need. There was very great waste of good food in England, because the women did not know its nature and how to use it. The elder children were taught the nature of the food they cooked. She would also add that the gutter children of the night and the ragged schools sometimes passed a better examination than the children in the elementary schools who were now receiving instruction.

General instruction in reference to all kinds of food, so that the pupil may understand why one class of food is more healthy and more economical than another, and may be taught how to prepare all food in an appetizing and attractive manner, both essential to true economy in food, is fully as important for children in America as it can be in England. The experiences recited during this discussion go to show that in England at least, the teaching of economical cooking can be successfully undertaken. If such knowledge could become general throughout the United States, the gain in prosperity, in health, in temperance, and in domestic happiness would be simply incalculable. The Americans have long been characterized as a nation of dyspeptics; but the prevalence throughout the country of cooks and housewives competent to the economical, healthy cooking of palatable food, would go far towards effectually eradicating dyspepsia.

IV.

WHAT IS DONE FOR THE PRACTICAL TRAINING OF GIRLS IN BELGIUM.

INTRODUCTION.

The presence of delegates from so many countries to the International Conference on Education in London in 1884, resulted in a most interesting presentation of the views held by the various foreign educators concerning the topics discussed. The accounts there given by these distinguished educators, of the systems and methods adopted in their several countries are, in themselves, valuable contributions to the contemporary literature of education.

In connection with the various papers and discussions by American and English educators just given, especially those relating to the practical training of girls, the following paper by the leading educational official of Belgium, with the accompanying programme of the compulsory industrial work required in the schools of that country, will be found of interest.

The importance of providing a corps of carefully trained teachers, when any new study is to be put in the schools of a country, is, as will be seen, fully appreciated by the "Director-General." The practical suggestions, relating to the training of these teachers, which accompany this paper in the form of "notes" will be found of value. It will be seen that the Belgium scheme comprises the whole field of domestic economy, of which cooking is but a part, although a very important part.

ON THE TEACHING OF DOMESTIC ECONOMY AND NEEDLEWORK.

By V. J. Germain, *Director-General of Primary Education in Belgium.*

The most distinguished authorities of our time on educational matters have laid down this principle, that primary education has for its object:—1st, to train concordantly the physical, intellectual, and moral faculties which, in children, constitute human nature and dignity; 2nd, to prepare children not for one profession exclusively, by special training, but for all professions (though within restricted limits, it is true) by a general education which can serve as a basis for any ultimate development.

It is a great mistake to turn primary schools into apprenticeship schools for preparing children for various trades; it is ignoring the want of a previous training of the faculties, before applying them to manual work, to production.

But if the task of preparing children for special trades cannot be made incumbent on schools, care should be taken that the teaching should embrace, together with the ordinary branches of study, those branches that can assist in forming clever artisans, intelligent agriculturists, and provident and thrifty housekeepers, *i. e.*, the rudiments of natural sciences and agriculture, sanitation, domestic economy, and needlework (in girls' schools), geometrical figures and drawings, and the making of paper, millboard and wood objects (in boys' schools).

Besides their advantages from a practical point of view, these various branches of study have a highly educational value.

1. They promote attention and methodical observation, impress on the mind accurate and clear notions, affording to intellectual activity the elements upon which it will have to be displayed.

2. They offer numerous opportunities to accustom the mind to perform with precision its proper functions, such as analyzing, comparing, judging, abstracting, generalizing, classifying.
3. They awaken and develop a taste for the beautiful.
4. They promote a taste for order and for work, and facilitate the intelligent exercise of a number of professions.

Our object is more especially to examine in this paper the principles upon which the teaching of domestic economy and needlework may properly be organized in girls' schools,

DOMESTIC ECONOMY.

The development now given to the education and training of women has for its special object to prepare them for their domestic duties. After what may be correctly described as their moral obligations, the most important duties of women are to preserve their children's health; to keep their house with cleanliness, order, and economy; to make their home attractive, and, as Madame Henry Gréville says, to provide for those around them, at the smallest possible cost, the greatest amount of material and mental comfort.

"Every wise woman buildeth her house; but the foolish plucketh it down with her own hands."

This has become proverbial, and it is often said that the wives cause the prosperity or the ruin of families. The schools must train orderly, saving women, who will know the value of thrift—women who will be the cause of the prosperity and never of the ruin of their families—women who may be the worthy companions of their husbands—women like the virtuous woman in the Scripture, whose price is far above rubies.

THE FUNDAMENTAL IMPORTANCE OF THE TRAINING SCHOOL.

Training-schools are the foundation of primary schools. We have therefore to examine, in the first place, what is the destination of training-schools for female teachers, from the point of view of domestic economy:

1st. *The interior organization of the school must be for the students a practical school of domestic economy.*

2nd. *A regular course of lectures on domestic economy must be given on the principle of observation and practical experiments.*

First, the whole house must be a model of cleanliness, order, economy, simplicity. Thus the head-mistress, teachers, and pupils must avoid studied elegance; they must be neatly dressed, but without such finery as would be out of keeping with the duties of teachers. The directress must often remind them that simplicity is the ideal of the beautiful. She should not forget that practice only makes good housewives. The students must mend their own clothes, make their beds, set their things to rights; they should be made to lay the cloth in the dining-hall, and attend in turns to the furniture, the library, and the collections. Once a week, on the Thursday afternoon, a certain number of students should, under the direction of the stewardess, and with the help of the cook, prepare the principal meal; on such days dinner should be served towards the evening.

The students must often be taught the judicious use of money, In families, it is generally the husband who earns the money, and the wife who superintends the expenses; let her exercise a wise discretion; if the money be well spent, the family prospers; if not, it declines. The first care of a housewife should be to keep an accurate account of her expenses. In the first place, she must prepare a budget. To make purchases first, and then to think how the money shall be obtained in order to pay, is the first step on the road to ruin. Let, therefore, the training-schools teach a simple and easy system of book-keeping, which will enable housewives to see at once and accurately the assets and liabilities of the family; let the students be taught not to incur unnecessary expenses, and the danger of buying on credit. They must also be taught how, by saving money, a capital is formed which quickly increases; this can be done by practice, each student having an account in the savings-bank. They should be compelled to keep their accounts in a regular manner; the money given them by their parents to pay for the school expenses, the washing of their clothes, and other sundry disbursements, the Government and Provincial "purses," or scholarships, constitute their *assets;* on the other hand, they should carefully note all the payments they make.

It may be hoped that, when they will become teachers, they will preserve the good habits they formed when at the training-school. Having thus been educated, they will help in training young girls capable of keeping an establishment with order, regularity, and comfort, thus ensuring domestic peace and happiness.

SUMMARY OF THE TRAINING SCHOOL STUDIES.

Second. The programme of the regular course of domestic economy, to be undergone in training-schools for female teachers in Belgium, has been settled as follows by ministerial decree of the 18th of July, 1881:—

1. On the qualities of a good housewife.
3. On the conditions requisite to make dwellings healthy. Ventilation. Cleanliness.
3. Furniture; how to keep it in repair. Kitchen utensils; their material, how to keep them in good condition.
4. Heating and lighting. Practical advice.
5. Laundry. Use of soap; on the use of liquid chlorides. Scouring. On the uses and danger of petroleum, naphtha, alcohol, oxalic acid.
6. On the keeping in repair of linen, bedding, and clothes.
7. Practical advice on food. Qualities of various kinds of food; how to preserve food: bread, potatoes, meat, fish, eggs, cheese, fat, vegetables, fruits, groceries.
8. General notions of culinary preparations. Waiting at table.
9. Drinks: water, milk, beer, wine, coffee.
10. Drawing up of detailed estimate for furnishing a female teacher's house.
11. Young ladies' dress.
12. Accounts of an establishment. Practical exercises.
13. Kitchen gardening.

Note.—The necessary measures shall be taken in order that during the first year student-teachers may be practically instructed in the service of the table, the keeping in order of bedrooms, and the most important culinary preparations. The directress shall be very careful in preventing the practical education of student-teachers from being turned into the performance of menial duties for the benefit of the institution.

INSTRUCTION IN DOMESTIC ECONOMY MUST BE PRACTICAL.

It is comparatively easy to draw up a good programme; but there is sometimes a wide difference between the spirit of the regulations and their practical application.

What are the fundamental rules to be observed by the teachers of domestic economy?

In the first place, domestic economy must be taught in training and primary schools in the same manner as natural sciences, viz., on the principle of observation and practical experiments.

It has been proved that purely oral lessons give but indifferent results; the teaching of domestic economy must be decidedly clear and practical. A few examples will explain our idea.

It is indispensable that a house-wife should be made to understand that she ought to take every precaution against sewer-gas. A simple dissertation on this subject is insufficient. By means of a special model it should be explained how the house drains are connected with the town sewers; the working of the air-valves, their position and use, should be illustrated by means of models; models of sinks and water-closets should be shown, and their mechanism explained. As to disinfectants, the students should be taught to use them practically, and in the required proportions.

The system of petroleum lamps, for example, should be described with great care, with the help of a special model showing all the details. The teacher will have to give the reasons for which the regular and proper trimming of such lamps is indispensable, and to explain the various improvements introduced in petroleum lamps to prevent explosions.

It will not be sufficient, when dealing with naphtha, to say that it is highly inflammable; this fact must be demonstrated by an experiment.

With regard to copper vessels, it will not suffice to say that they are dangerous on account of the presence of verdigris; the formation of this poisonous substance must be illustrated by experiments.

Again, when speaking of the advantages of filters, it should be explained how filters are made, and a few experiments should follow to show the absorbent and antiseptic properties of charcoal.

ILLUSTRATIVE COLLECTIONS AND PRACTICAL EXPERIMENTS ESSENTIAL.

As a consequence, it is indispensable to establish in all training schools collections destined to illustrate the various branches of study. Experiments should be more often resorted to, and the students should be called upon to form for themselves collections relating to the various subjects taught them.

In the Belgian section (Health Exhibition) a very exhaustive collection is to be found of the different articles and models which compose a museum of domestic economy for training schools. The objects in this museum have been contributed by the Belgian training schools; the classification adopted is that of the above-mentioned programme.

Another remark I have to make on training schools is that the Belgian Government has found it necessary to include among the subjects to be taught in connection with domestic economy the following subject—"Kitchen Gardening." In order to teach properly this kind of gardening, training schools for female teachers should have a garden for growing fruits and vegetables, and laid out according to the most approved methods, where the future teachers may have practical lessons during recreation time and on holidays.

Kitchen gardening should be taught rather to female student-teachers than to male teachers, to young girls rather than to young men, because it is generally the wife who attends to the kitchen garden. An eminent French agriculturist, M. P. Joigneaux, says on this subject:—"It cannot be believed how quickly horticultural knowledge is assimilated by women. For the very reason that they practice gardening indifferently, and are fully alive to its advantages, they would always be well disposed to receive favorably any advice given to them; and it would be seen that they would make more progress in a year or two than the best intentioned men in five or six years."

PROGRAMME OF INSTRUCTION IN PRIMARY SCHOOLS.

What must be taught of domestic economy in primary schools?

In my opinion the teaching carried on by means of practical lessons, of lectures and dictations, should include the most important subjects of the programme of the training schools, and particularly all that refers to the cleanliness of dwellings, the keeping in good order of furniture, the laundry, and the preparation of ordinary dishes. As in the training schools, the teacher should illustrate her lessons by models, and give to her teaching the most practical character possible. Care should be taken that the pupils form collections of samples of various textiles, of colonial produce, of substances used for laundry purposes, for the cleaning of clothes, &c., at the same time taking all necessary precautions to guard against all possible danger.

After leaving the primary schools, it is desirable that young girls belonging to the working classes should attend the "écoles ménagères" (housekeeping schools), the lessons in which are organized on the same plan as the lectures on domestic economy in training-schools.

In these "écoles ménagères" sewing and dress-cutting, washing and ironing, housekeeping and cooking are practically taught.

Let us sincerely hope that all these institutions may prove as completely adapted for their destination as can be wished, and may educate young girls who will know how to make a home pleasant, cheerful, and decent. "The 'écoles ménagères'" says Madame Hippolyte Meunier, "may and should teach every young girl that her future duty will be to make her home happy, agreeable, and pure; to ornament it with a few flowers, to decorate it; and to make it attractive by allowing full play to the beneficent rays of the light-giving and air-purifying sun; by increasing through her constant wisdom, the resources of comfort, and by displaying the treasures of her mind and heart."

NEEDLEWORK.

The following are the various kinds of needlework the teaching of which has been made compulsory in the Belgian primary schools since the year 1877:—

FIRST OR ELEMENTARY GRADE:

1. Knitting a *band* or *garter* (two needles), various stitches—plain stitch; seam-stitch; ribs; intakes; missing and picking up stitches.
2. Knitting circular objects (four needles)—mittens.
3. Socks, study of the proportions; mounting and knitting.

SECOND GRADE:

Going over preceding grado.

1. Knitting stockings; proportions of the various parts; drawing of a stocking and its various proportionate parts; mounting and knitting; mode of measuring the stocking whilst it is being made; mode of strengthening heel.
2. Marking on canvas: alphabets and ciphers.

3. Rudiments of sewing: running-stitch, side-stitch, stitching, sewing, seaming, hemming, double-seaming, selvedge seams, folded seams.

4. Making of easy and simple sewn objects: towels, napkins, pocket-handkerchiefs, aprons, underclothing, mending, and patching.

THIRD GRADE:

Going over preceding grade.

1. Knitting petticoats, vests, mittens, gloves.
2. Marking linen: alphabets and ciphers.
3. Stitching, puckering, button-holes, eyelets.
4. Mending clothes, darning stockings, patching clothes and linen, fine darning of tables and ordinary linen.
5. Making and cutting clothing, and particularly under-clothing.

Note:—Fancy work, crochet, embroidery, tapestry, and net-work shall only be taught to pupils perfectly familiar with all kinds of useful work. Notwithstanding the progress realized in recent years, many schools have remained below the mark with regard to the teaching of needlework and dress-cutting.

The want of method is the principal cause of their inferiority. A number of teachers have adopted the individual method, that is to say, that the pupils are engaged during the same class on works of various kinds; sometimes, however, they are engaged on the same kind of work; but the teacher does not endeavor to obtain simultaneous exercises; she goes from one pupil to another, and gives advice to each one individually. In order to maintain discipline, reading or singing goes on whilst needlework is being done; it is thus forgotten that full and undivided attention should be given to the study of needlework, as well as to any other branch of study.

To ensure success the teacher must apply to the lessons in needlework the methodical principles to which we think it our duty here to call attention.

1. All needlework indispensable in every household should be taught (in schools), and the task of the teachers is not accomplished until all the pupils know how to cut and make bed and ordinary clothes: sheets, pillow-cases, aprons, underclothing, children's dresses, men's shirts, boys' vests and knickerbockers, dressing-gowns, &c.

Fancy work may be taught only to pupils perfectly familiar with all kinds of useful work.

2. The lessons to be given on the simultaneous method.

3. Every lesson to begin with a short survey of the preceding lesson.

4. Every new kind of work shall be the object of an oral lesson including, if need be: (*a*) a study of the various detailed parts of the object to be made; (*b*) the execution or explanation of the work by various intuitive processes (after Fröbel's system, canvas frame, and diagrams on the blackboard, slate, and copy-books); (*c*) questions by means of which the teacher shall invite various remarks, draw comparisons between various objects and ascertain that the pupils have understood the subject.

5. After the oral, demonstrative, and intuitive lesson comes the application, or, properly speaking, the practical lesson, during which the teacher shall allow the pupils considerable freedom and initiative.

6. Accuracy in the work is absolutely necessary. Various methods may be applied. In certain cases the mutual system may be resorted to. Thus, for example, a pupil having made a hem on the canvas-frame, the others, after exchanging their work, examine, each in her own special department, whether in the work submitted to them the stitches are properly and regularly made.

7. In the higher division, the pupils shall, from time to time, write essays accompanied by designs; they will thus compose for their own private use a guide to dress-cutting and making.

8. Care should be taken that the pupils form a collection of the various objects they have made—garters, mittens, stockings, &c.—for the children will not fail to try and increase their collections.

The application of intuitive processes requires great attention. The first condition to be fulfilled before undertaking work of any kind is to understand it well in its details. A teacher gifted with an ingenious disposition will be able to invent intuitive processes of her own. For knitted work, for instance, she will prepare objects worked with very stout yarn, and have them pasted on pieces of cardboard which she will use for explaining difficult stitches.

The canvas-frame is indispensable for the intuitive teaching of sewing, marking, tapestry, stocking-darning.

Large diagrams hung on the walls for studying dress-cutting will be found useful to teachers who are not proficient in the art of drawing on the black-board.

USEFULNESS OF DRAWING IN TEACHING THIS STUDY.

Too much stress could not be laid on the usefulness of drawing as a help to the study of needlework. With the help of diagrams the intuitive study of all kinds of work becomes possible. The following, by way of example, are a few of the figures to be drawn on the black-board:—

Knitting.—Plain stitches, plain and seam stitches, drawing of a sock, drawing of the various parts of a stocking, drawing of darning stitches, drawing of picking-up stitches, drawing of marking stitches.

Sewing.—Diagrams representing running-stitch, stitching, side-stitch, hem-seam, button-hole stitching; the mode of joining pieces, patching, and mending; diagrams showing how to cut a piece of cloth economically.

The training schools must, in the first place, enable their students to realize the programme set for the popular schools. The only means of securing this result is to apply the same method to the lessons taught, both in the training and in the primary schools.

It is hardly necessary to point out that the teaching of needlework, as applied to student-teachers, is more comprehensive than the teaching in primary schools; student-teachers are taught more fully dress-cutting and making; they are taught to use the sewing-machine, as also certain fancy work; they undergo a special course of training; but all this teaching should be carried on in the same methodical spirit.

In order to hasten the application of the above-mentioned principles, temporary training classes should be established for the teachers of primary and training schools.

The Belgian Section (Health Exhibition) comprises two methodical exhibitions of needlework, that of training schools, and that of primary schools. The works and patterns are classified in the order adopted in the official programme.

In Belginm the Communal administration supplies gratuitously the children of the poor with the necessary materials for needlework.

The following is the programme adopted for the training schools:

FIRST YEAR.

I. *Stocking-knitting.*—Relative proportions of various parts, diagram representing stocking and proportionate parts, mounting and knitting, measuring stocking whilst it is being made, mode of strengthening heel.

II. *Marking.*—Marking-stitch on canvas, alphabet and ciphers, marking-stitch on linen.

III. Rudiments of sewing: various stitches, hemming, seaming, stitching, puckering, button-holes, eyelets. Cutting and making: sheets and pillow-cases, aprons, and under-clothing.

IV. Mending clothes and linen.

V. Fancy work, tapestry, crochet.

SECOND YEAR.

I. *Knitting.*—Petticoats, vests, mittens, gloves.

II. *Sewing.*—Cutting and making underclothing, night-gowns, flannel vests, children's dresses, men's shirts.

III. Darning and mending stockings, fine darning (table and ordinary linen).

IV. Fancy work: crochet, embroidered initials, etc.

THIRD YEAR.

I. *Sewing.*—Cutting and making men's shirts, boy's vests and knickerbockers, young girl's dressing-gowns and dresses.

II. How to use the sewing-machine.

III. Fancy work.

IV. The teaching of needlework in Primary Schools: (*a*) Knowledge of methodology to be acquired by needlework teachers; (*b*) Programme of Primary Schools (20 July, 1880); (*c*) Necessity of simultaneous method for teaching needlework as well as other branches; (*d*) Account of the intuitive methods to which teachers must resort; (*e*) Application of drawing to the teaching of needlework, and particularly to dress and linen cutting; (*f*) On the system of teaching, explanations, questions; (*g*) Didactic exercises.

In primary schools four hours weekly are devoted to needlework; in training schools the time devoted to needlework is four hours weekly during the first and second years, and three hours weekly during the third year.

V.

MANUAL TRAINING IN FRANCE.

BY M. SALICIS, LATE INSPECTOR-GENERAL OF MANUAL TRAINING.

The papers from which the following extracts are taken are among those published by the New York College for the Training of Teachers, the latest* being received just as the proof-sheets of this Appendix are in hand, and are therefore, here added as they contain a synopsis of the manual work given in the Elementary Schools of France to girls, as well as boys.

From the paper written by Dr. Butler and issued as a "Leaflet" † is taken the following brief memoir of this distinguished Educational Reformer.

On December 1, 1889, there died at Paris in the seventy-first year of his age, a man than whom no one has more ably and persistently urged the cause of that education, sometimes called new which is based entirely upon a study of the nature and capacities of the child—M. Salicis. Not in France only, nor even in Europe alone, was M. Salicis known; the upholders of the argument for a natural education and manual training in England and the United States gladly recognized in him an inspiring leader and friend. The work to which the last fifteen years of his life were devoted, the introduction of manual training into the schools of France, has already produced abundant results. Of all the civilized nations France is to-day far in the van in the matter of offering to her citizens a thorough and practical primary education. If evidence of this had previously been wanting, the Paris Exposition of 1889 proved it conclusively. For this high honor which is justly due to France, M. Salicis is fairly entitled to a large share of the credit.

M. Salicis was born in the department of the Charente-Inférieure on June 17, 1818, and before he was twenty years of age was admitted to the *Ecole Polytechnique*.

He entered the Navy, saw active service in the Crimea, was active in Paris during the siege by the Germans, and shortly afterwards was a representative from Paris in the National Assembly.

Almost immediately he began to agitate for the addition of manual training to the curriculum of the elementary schools. By manual training M. Salicis did not mean apprenticeship or technical teaching, but manual training as the New Jersey Council of Education has defined it and as the term is used in the United States by its more intelligent advocates. It was one of M. Salicis' favorite illustrations, when reproached for attempting to make a workshop of the school, that manual training bears the same relation to the technique of the workman or the artist that orthography does to literature or poetry. He saw that the hand is of supreme intellectual importance, that it is primarily a vehicle of mental expression and the instrument by which the mind acquires a large amount of its information concerning the world of objects. He saw moreover that in the neglect cf the training of the mind through the hand, the schools were entirely overlooking an essential part of their task. To the correction of the traditional order of things in the schools of France, M. Salicis set himself and how well he succeeded the world knows.

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*Manual Training in France by M. Salicis, late Inspector-General of Manual Training, Educational Monographs, No. 3, Vol. III., May, 1890.

† Educational Leaflet, No. 51, January 15, 1890. Gustave Adolphe Salicis, by Nicholas Murray Butler.

THE INTRODUCTION OF MANUAL TRAINING IN PUBLIC SCHOOLS OF PARIS.

His first experiment was in the now celebrated *École de la rue Tournefort*, a municipal school in Paris, where he had the invaluable co-operation of the director, M. Laubier. In that primary school scores of children may to-day be seen busily at work at their drawing, modelling or elementary steps in wood and iron working. To these subjects half of the time in school is given and it is conclusive proof of their educational value to say that the pupils of the *École de la rue Tournefort*, though devoting much less time than their fellow pupils in other schools to the more usual school studies, are found inferior to none when they come to the official examinations for the "certificates of primary studies." After making an official examination of the status of manual training in other European States and writing exhaustive reports on what he had seen, M. Salicis was appointed in 1885 an Inspector of Public Instruction and charged with the duty of elaborating courses of study in manual training subjects for the normal schools and also for the primary schools throughout the country. Despite financial and other obstacles to-day all the normal schools of France train their students to teach the subjects known as manual training and all over France the school is being completed and rounded out as rapidly as possible by processes drawn from the workshops. Just before his death M. Salicis had sent to the New York College for the Training of Teachers the manuscript for a monograph on Manual Training in France, which will shortly be printed in the series of *Educational Monographs*.

From the "Monograph" just referred to, the following extracts are taken:

LEGISLATIVE ACTION.

It was in March, 1882, that the Chamber of Deputies voted in favor of making manual training obligatory for the different grades of primary instruction. Thus was realized in a much larger sense the scheme which Condorcet laid before the Convention nearly a century ago, and which the strong heads of the time naturally dubbed Utopia; it was spoken of as Condorcet's Utopia! Very happily this is the way with a goodly number of Utopias; to-day they are follies in the sight of barren scepticism, and to-morrow they are fruitfully fulfilled.

Up to 1882, manual training was not altogether wanting in France; but where it did exist, it was chiefly in the form of apprenticeship, or rather of undivided preparation for one special calling. The institutions offering this training bore the characteristic names of apprentice's schools, industrial schools, technical schools, schools of arts and trades, and so on. These institutions were private corporations; their number was very limited and they could not give to their pupils the general stamp which is inherent in a nationally ordered instruction.

Begining at the very foundation, and in keeping with the spirit of the law, the State has organized and is still busied in organizing, institutions which are *primary* above all; just as are those whose fundamental principles are the book and the pen. The State should no more aim to turn out accomplished workmen after a course in simple manual training, than it claims to graduate thirteen-year old literati and historians on a pen and book instruction. But just as it ought to provide the pupils as far as possible with the knowledge necessary to spell their language correctly and also with the elements of a tolerable style, just so in manual courses it can spread a knowledge of the correct use of the principal tools and of the ordinary operations with them.

Given a child's nature, nothing else is needed in order to develop there the preexistent germ which stimulates him to realization; he can then be roused to a taste for work, and this is the inevitable outcome of training and underlying skill. The whole secret is here: underlying skill, disclosure of tendencies, taste for work.

DELAYS IN EXTENDING THIS INSTRUCTION THROUGHOUT FRANCE.

Far from being well under way in 1882 with this worthy end in view, all preparations for the journey had still to be made; methods, building, stock of tools, body of instructors—all this coupled to the great obstacle that on making the new studies obligatory, it had been forgotten to make any appropriation for them.

Thanks however to the stand taken by M. Jules Ferry, Minister of Public Instruction, and by M. Buisson, Director of Primary Instruction, a Special Normal School for manual training was decided on and was straightway created. Admission by competition was granted to forty-eight young school-teachers, graduates of the Université de France. They were taught there for one year the following branches:—

SPECIAL NORMAL SCHOOL COURSE.

1. Experimental physics and chemistry as illustrated in simple phenomena, i. e., such experiments as might be repeated in elementary schools; the instruction was collective but the students had the privilege of individual manipulation.
2. Natural history, treated in the same way.
3. Plane trigonometry, algebra, and elementary mechanics.
4. Descriptive geometry with direct applications to perspective and to stereotomy.
5. Drawing, modelling, moulding, and graphic designing.
6. Treatment of wood at bench and turning-lathe.
7. Treatment of iron in the smithery, with vice and turning-lathe.
8. As subordinate studies: choral music, French literature, fencing, and fire practice.

This programme was to be completed at a latter period by a scientific study of various fertilizers in their relation to the nature of the soil and to special productions. Repeated quizzes, competitive reviews, and practical trials kept these young teachers always on the alert. Although the programme was overcrowded for immediate needs, it was thoroughly carried out, and was satisfactorily assimilated in all its parts.

From an essentially manual point of view it covered about the following ground:

Stereotomy.—Design and construction of a soffit, of a full centre, of a segmental arch, of a stilted arch, of a rampant arch; development of the same; stringer of a staircase.

Drawing and modelling.—Rendering of twelve models selected from the collection of the National School of Fine Arts. No modelling was done, unless preceded or followed by a design of the object.

Joinery.—Besides preliminaries, twenty exercises in joining and ten summaries.

Smithery.—Introducing details, fire-building, striking in presence of one, two, and three, smiths, welding, rolling, measuring the calibre, tempering.

Millwright's work.—Practice in flat and half-round files, mortise-chisel, graver, saw.

Wood turning-lathe.—Railings of different styles, Médecis case.

Metal turning-lathe.—Slide cylinder.

Every object made was to be a material rendering of an off-hand sketch. A memorandum of each sketch was entered in a special workshop note-book, along with the teacher's private explanations and estimates.

TEACHERS' CERTIFICATES.

The close of the year witnessed the establishment of a certificate of proficiency for such as were fit to teach manual work in the normal schools and in the higher primary schools. On examination this certificate was awarded to most of the students in the first promotion; the few backward ones obtained this distinction in the following year, along with twenty-four new students of the second promotion.

The Special School has thus graduated seventy-two professors of manual training; since then, the normal school in St. Clond has swelled the list by a few adepts, and some independent teachers have shown themselves so well versed in the several requirements as to pass satisfactory examinations in the same. Thus it is that now, in strict compliance with the law, each one of our ninety normal schools, including Corsica and Algeria, is provided with a competent professor of manual training. On the other hand these schools are fully equipped with laboratories, workshops, and tools; with respect to the new branches, the programme is identical with the one adopted by the Special Normal School, minus the above mentioned 3rd, 4th, and the latter part of 8th. The course is completed within three years at the rate of four hours per week, a rate which seems very inadequate.

ANNUAL INCREASE IN THE NUMBER OF COMPETENT TEACHERS OF NORMAL TRAINING.

Still these normal schools are beginning now to graduate every year something like 1,500 teachers, who are pretty well fitted to introduce the new studies in the numerous continuation schools. The outlook for the elementary schools is also bright, and it may be hoped that they will delay no longer in incorporating special teachers in their body of instructors. Summer schools are even being opened gradually in the normal schools to those teachers in each department who will pledge themselves to regular attendance. These voluntary teachers carry back to their schools a manual knowledge which is sufficient inasmuch as it is primary ; their own works are their models and their note-book is their guide. The remainder of their equipment, which in the beginning need be only slight in the way of buildings and tools, will depend altogether on the General Councils and on the Municipalities.

In fifteen years from now, nearly all our primary high schools and most of our 40,000 elementary schools for boys ought to provide our 2,750,000 male children of the working-classes with the instruction which will fit them completely for the future they have in store.*

This period of expectation would have been shortened, and the standard of manual training would surely have been raised, if the Special Normal School for Manual Training, founded by M. J. Ferry, had been developed instead of suppressed by his second successor ; unfortunately, ministers have this point in common with the days,—they follow upon one another without being alike.

After reciting the attractions of the new study to the pupils, and enumerating various obstacles in the municipalities to its more rapid extension throughout the country, the official programme of the study as now pursued is given ; followed by some very suggestive comments by M. Salicis, which will be found well worthy of consideration.

For the time being and awaiting further reforms, manual work enters under the head of physical education. A synopsis of the same is as follows :

BOYS.

5–7 years.	7–9 years.	9–11 years.	11–13 years.
Easy exercises in plaiting, folding, and weaving. Cutting out pieces of colored paper and uniting them in geometric designs. Easy basket-work. Combinations of colored worsteds on canvas or on paper.	Development of dexterity. Construction of geometric solids out of pasteboard. Basket-work, combinations of many colored twigs. Modelling. Reproduction of geometric solids and of very simple objects.	Wooden slips adorned with painted pictures and colored paper. Easy wire-work ; trellis-work. Combination of wire and wood-work; cages. Modelling simple architectural ornaments. Facts about the most common tools.	Combined exercises in drawing and modelling. Objects sketched on a given scale and vice versa—objects reproduced from a sketch on a given scale. Chief tools used in wood-work. Graduated exercises. Planing, sawing wood, simple joinery. Boxes, nailed or put together without joints. Turning lathe. Turning very simple objects. Chief tools used in iron-work. File exercises, paring or polishing rough pig-iron and cast-iron.

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* If we do not speak of the girls, it is because they have already to a certain extent a suitable *primary* manual training, consisting of needlework, cutting out, and dress making.

GIRLS.

5-7 years.	7-9 years.	9-11 years.	11-13 years.
Easy Froebel exercises. Plaiting, folding, weaving. Knitting small articles.	Knitting and study of the stitch. Meshes on the right and wrong sides. Ribbed work, increasing, diminishing. Making stitch on canvas. Elements of sewing. Hems and overcastings. Manual exercises to develop dexterity. Cutting out and joining colored paper. Easy trials in modeling.	Knitting and taking up loose stitches. Marking on canvas, forward stitch, side stitch, back stitch. Overcasting stich. Plain seam, hem, double seam. Overcastings on selvedge. Overcastings on turned in folds. Towels, napkins, handkerchiefs, aprons, shirts, piecing.	Knitting skirts, jackets, mittens. Marking on linen. Stitching, gathers, button holes. Mending garments, darning. Elements of cutting and making up very simple garments. Elements of domestic economy in its relation to the kitchen, to washing clothes and keeping them in repair, to the toilet, to household duties, to the garden, and to the poultry yard.

Such is nowadays in France the part which manual training plays in elementary schools. This programme may be altered to meet the wants of any and every school, and in such a way that each school can select a part of the whole in keeping with its means. In any case the Council of every department is vested with a certain authority in matters of changes such as it may seem wise to bring about in local applications of manual training. * * *

M. SALICIS CRITICISES THE COURSE.

Personally we do not think that the type of programme shown above should be maintained as a whole, at least as far as the boys are concerned.

It seems to us that up to the eleventh year there is not a sufficient demand made upon individual thought and judgment, or upon the complete subjection of the hand to an instantaneous decision of eye and will. Moreover, physical strength meets with no means or incentive to develop. Weaving, basket-work, plaiting,—all this is quiet work, where the fingers are trained to move evenly and mechanically, without any intellectual exertion. The proof of this lies in the fact that this kind of work is introduced with greatest ease in the asylums for the blind and weak-minded. We believe that the true aim of manual training should be to accustom a child at an early age to work standing, and as far as possible, to bring all parts of his body into play. Does he not do this anyway, if left to himself? Is it not a source of continual wonder to see the yougest children stand from morning to night; they are on such a constant go that it is impossible for their parents to keep up with them. And then, thanks to this healthful weariness, when night comes on they fall into a sound sleep from which they arise at early dawn refreshed and ready to begin all over again.

THE CHILD'S INSTINCT FOR ACTIVE EXERTION.

The needs of a child are made evident by his love for hoops, tops, ball-playing in all its phases, and so on. A child must dig ditches, build dams, climb trees, and experiment with the power of his lungs; he must do all this and in the same day. He will even skip his meals, if he has a chance.

It is very true that all this cannot be done in a school; still the natural inclination of a child should not be tampered with, but this overflow of vital energy should be controlled in such a way as to direct the main course into a channel of future usefulness.

Thanks to the freedom of scope and means which the Municipal Council of Paris has given us, it is on these lines that we seek to promote manual training in the public school of Rue Tournefort. We lay special stress upon our methods, because this institution realizes a type whose tendency is to spread as a whole or in part.

METHODS OF THE SCHOOL IN RUE TOURNEFORT.

There, all children from the ages of six or seven years have a part in active manual work. As soon as they enter school they begin modelling, and they keep up the study during their entire school course. They are also taught to treat soft wood with the saw, the rasp, the chisel, and the mortise-chisel. They are then advanced to the plane, the turning-lathe, and the iron-work including furnace duty.

At a very early age they begin to sketch on a given scale, all draughting being recorded in a note-book which is never to leave them. These memoranda are chaotic at first, but they assume rapidly a definite shape; the accounts of daily work are tabulated as regards the nature of the work, its material, and the time spent on it.

The school is made up of five classes, the highest being intended for special or post-graduate work.

Classes in the public school of Rue Tournefort.	Years.	Hours per week devoted to manual work.
Special class	12–14	21
First class	10–12	8½
Second class	9–11	5
Third class	8–10	4
Fourth class	7–9	3

No attempt is made to specialize before the special class. Once there, students are given successively finishing touches in a complete general training, but besides that, they have access to such special branches as will foster more especially an avowed bent.

The new instruction involves an additional expense of 1,500 francs a year; the school receives 260 children, and were it not for its small quarters it could take in 300 without its outlay being increased other than by the expenditure for raw material.

THE RESULTS AFTER SIXTEEN YEARS.

This institution has been in operation now for nearly sixteen years, and the experiment may be considered a success from the triple point of view of hygiene, general instruction, and practical results. The children thrive notwithstanding the fact that their attendance in school is longer by two hours than the usual regulations provide. Their occupations are so varied, in accordance with their mental and physical aptitude, that there is no sign of weariness after their exertions of mind and body. Ardor pervades them in a characteristic way; their heaviest punishment is to be debarred from the workshop.

As regards instruction, the annual examination ordeal for the certificate of proficiency in primary studies is a sufficient relative criterion; it proves that the scholars from the Rue Tournefort are among the best off, as far as scholastic knowledge is concerned. Thus, in addition to what their comrades in other schools know, they are indebted to the new instruction for all the manual training they have acquired. The practical results are made manifest in the facilities for finding good apprenticeships, for reducing their length, and for being sooner compensated.

Besides choice workmen devoted to their calling, this school has graduated expert accountants, teachers, professors even of higher branches, and artists; one of these, famous when twenty years old for his water-colors, is now much sought after by New York publishing houses.

EXTENT OF MANUAL TRAINING IN SCHOOLS OF PARIS.

Of the two hundred boys' schools in the city of Paris, about one-half are equipped with benches and turning-lathes, at which the older scholars do manual work. The Municipal Council and the Board of Instruction are both endowed with the very best will, and still they have not dared to settle definitely the amount of importance to be attached to primary training. As a consequence, this instruction is somewhat subordinate, and up to the present time the results attained are not in proportion to the sacrifices made. Another cause of delay is the lack of teachers well qualified in point of methods and statements. As a matter of necessity workmen are called in; they are good practical men as far as their own work goes; but when it comes to imparting knowledge, their teaching is decidedly empirical.

This state of affairs has very happily reached a climax and a sweeping change will take place; the teachers will now be recruited from the ranks of Normal School graduates of the department of the Seine.

APPENDIX P.

EXTRACTS

FROM

OFFICIAL REPORTS

IN REGARD TO THE

STATUS OF INDUSTRIAL EDUCATION

IN

SEVERAL CITIES IN THE UNITED STATES.

I. Introduction.
II. Report of the State Board of Education of Massachusetts (1883–4).
III. Reports by school authorities of Boston, Massachusetts (1883–1886).
IV. Reports by school authorities of Newport, Rhode Island (1882–1885).
V. Reports by school authorities of New Haven, Connecticut (1883–1887).
VI. Reports by school authorities of Philadelphia, Pennsylvania (1881–1888).
VII. Report of Committee of Board of Education of the City of New York on Industrial Education (1887).
VIII. Criticisms of the action of the Board of Education of New York City reviewed by Nicholas Murray Butler, Ph. D. (1888).
IX. The status of the Manual Training movement as shown by recent official reports (1888–1889).

I.

INTRODUCTION.

The papers here grouped supplement, and in some instances continue, the history of the development of public opinion which, by gradual growth, has resulted in effecting the introduction of some forms of industrial education as a part of the school system of several American cities, and, in a few cases, to preliminary legislative action by the State.

The indications of an educational advance, on the lines laid down when the study of Industrial Art Drawing was successfully incorporated as a part of the regular courses in the public schools, were evident in the preceding volume of this Report. (See Part I, pages 63–71.)

In the text of the present volume the latest accessible information in regard to the status of this movement in the several towns and cities referred to, has been embodied. (See Part II, pages 97–100, and pages 145 *et seq.*, *et al.*) In these accounts the statement is made that such other material, extracts from official reports, etc., as may be requisite to a continuance of the history of the movement from its inception, and to show the methods adopted, as well as to record the successive steps in the growth of public opinion down to the date of publication, will be given in this Appendix. In addition, the recent movement in the city of New York is here recorded, as well as the laws passed by the legislature of New Jersey, and the fact of the sending a Commission to Europe by the legislature of Pennsylvania. A large amount of miscellaneous material relating to the various phases of Industrial Education all over the world is given in the preceding appendices; as was also promised in the text. In accordance with these promises the following extracts from various American official reports, "annual" and "occasional," have been collated.

A summary of the earliest steps taken in Massachusetts towards the introduction of "the manual element in education" from 1877 to 1882 was given, as just noted, in Part I. The history of this movement as set down in the annual reports of the State Board of Education, has been further continued in this Appendix.

Extracts from the annual reports of the State Board of Education of Massachusetts, and of the city school authorities of the following cities, namely: Boston, Massachusetts; Newport, Rhode Island; New Haven, Connecticut; and Philadelphia, Pennsylvania, are here included, as well as the special report of the committee appointed for that purpose made to the Board of Education of New York City, with a review by Dr. Nicholas Murray Butler, of some published criticisms upon the action of the Board, in which the President of the Training College for Teachers states concisely some positions of the advocates and opponents of Manual Training.

The extracts from the report of the school authorities of Newport serve to show how such movements begin. In the other cities, with the exception of New York, where as yet the first practical experiments are not a twelve-month old, much progress has been made towards the very general introduction of some forms of industrial training in the schools, as is shown in the earlier chapters of this volume.

The extracts here given show by what steps these results have been attained, and may, therefore, be found of use to those who in other communities are seeking to accomplish similar results.

The final paper of this Appendix, compiled from recent reports made to State Boards of Education and other bodies, summarize the latest utterances, and designate the advanced ground which the leading advocates of Manual Training seek to occupy; and thus serve to show the status of the Manual Training Movement in the year 1889 as depicted by its friends and promoters.

II.

REPORTS OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.

EXTRACTS FROM THE ANNUAL REPORT OF THE MASSACHUSETTS STATE BOARD OF EDUCATION FOR THE YEAR 1883-'84.*

INDUSTRIAL EDUCATION.

The following brief words include all that the Board said upon this topic in their brief formal report of 22 pages:

> The interests of Industrial Education have received no new impulse, nor has any especially new light been thrown upon the subject. It is a line of effort in respect to which the Board feels that it should make haste slowly. The experiments heretofore reported, are still in progress, and the results are by many fondly anticipated. So widely divergent are the needs of our youth of special instruction in the elements of the various handicrafts—a difference arising, at least in part, from contact with such handicrafts in the country, and separation from them in the cities—it is doubtful if such instruction can for the present enter as a considerable element into our public school work. Cherishing towards it, however, a hospitable spirit, we may cordially welcome the fruits of experience. * * * * * *

The reports of the "Visitors of the Normal Schools" follow; then comes the report of Hon. John W. Dickinson, the Secretary of the Board. The Secretary gives a brief summary of the Massachusetts School system which comprises four grades of schools, namely: "Primary,"—"Intermediate,"—"Grammar" and "High School." These grades are described; of the last, he says:

THE HIGH SCHOOLS OF MASSACHUSETTS.

> Our high schools also hold an important place in our system. They determine the course of studies to be pursued in the lower schools, and the methods of teaching by which the topics are to be presented to the learner's mind.
>
> It was a fortunate thing for the Commonwealth that Harvard College was founded in the first years of our political history. The existence of the college made the old grammar schools a necessity, and the requirements of the grammar schools gave character to all the grades of schools below them. If the public schools of the Commonwealth hold a relatively high place, it is due in no small degree to the early establishment of the superior schools.

He then discourses as follows concerning

THE PROVINCE OF THE PUBLIC SCHOOLS.

> Our public educational institutions are conducted in accordance with the theory that it is their province to furnish an opportunity to all the children of the State to acquire so much knowledge and so much discipline of the faculties as are necessary

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* "Forty-eighth Annual Report of the Board of Education; together with the Forty-eighth Annual Report of the Secretary of the Board. 1883-84. January, 1885. Boston: Wright & Potter Printing Co., State Printers, 18 Post-Office Square. 1885. Pp. 274, and cxlv."

to prepare all to enter with a good chance for success upon any of the practical affairs of either private or social life.

Our public schools do not propose to train their members directly for the practice of any trade or any profession. They propose to do much more than that, to give to the children the opportunity of obtaining that knowledge and that cultivation of mental power, which will, in due time, bring them to the various occupations of life, ready to pursue them in the most intelligent and most productive manner.

John Stuart Mill says, that "what professional men should carry away with them from the public schools is not professional knowledge, but that which should direct the use of their professional knowledge, and bring the light of general culture to illuminate the technicalities of any special pursuit." "Men are men before they are lawyers, or merchants, or manufacturers, and if the schools make them sensible men, they will make themselves sensible laborers." We shall be in danger of creating a race of mechanical men, if we do not train them to something above mechanics before their minds are narrowed to the study and practice of the mechanic arts. The public schools should aim to cultivate that general intelligence and that philosophic spirit which will bring the youths of the country to their particular pursuits in life with strong minds and good hearts. In doing this, with all that is implied in it, they will accomplish enough, for they will produce an education which will prevent a man from being lost in his business. They will furnish him with a knowledge of principles and the power of self-control. This knowledge and power will prove the source of endless progress in all the affairs of practical life, and prevent its possessor from placing a higher value on the means of living than on the life itself.

THE WORTH OF A BROAD EDUCATION IS MEETING WITH GROWING RECOGNITION.

A liberal education has always been considered necessary to a respectable position in the professions, but unnecesary to success in the manual occupations of life. Young people intending to go into business, as it is called, frequently leave school before their courses of study are completed, believing that the abstraction of science and the refinements of literature have no appropriate place among the acquisitions of business men. The modern experiences of business men are leading them to a change of opinion, and they are now inclined to choose the graduates of the high schools and colleges, rather than the uneducated, for the business capacity which a generous culture is adapted to produce. Secondary instruction, they find, is as necessary to guide the hands to successful physical, as it is to guide the faculties to successful mental, labor. The artisan as well as the artist, the business man as well as the professional, the private citizen as well as the law-maker, must be lifted above the mechanical operations of their work, by a knowledge of causes, and by skill in the application of principles.

If one passes successfully through all the grades of our public schools, he will be fitted to make, under the guidance of his own acquired knowledge and trained powers, all other acquisitions necessary to enable him to occupy, with credit to himself, his place in life.

The reports of "The Agents of the Board," who supervise the system throughout the state, follow. From the report of Mr. George H. Martin, on High Schools, the following extracts are taken as tending to controvert some popular prejudices against these schools. In one, the school of Milford, it will be noticed that a similar exhibition of scholars' work was held to that recorded in this volume as having been undertaken in the High School of West Boylston.

HIGH SCHOOLS.

MEMBERSHIP AND ORGANIZATION.

The high schools have been called, by one class of opponents, schools for the rich, where children whose parents might pay for their education are educated at the public expense. By another class they have been called schools for the poor, where children of non-taxpaying parents are educated out of their sphere at the expense of the tax-paying part of the community.

I have found that the schools are composed neither of children of the rich nor of children of the poor, but of children of the people, some rich, some poor, most in that condition which characterizes our Massachusetts towns, neither rich nor poor. In one school I found the children of the mayor of the city, of a member of Congress and of a colored barber in the same classes. In many towns I have found the children of wealthy manufacturers side by side with children of the operatives in their father's mills.

In no case is there a thought of condescension on the one side nor of undue aspiration on the other. The teachers have communicated to me some most interesting facts of the self-denial of parents in humble circumstances to secure to their children better advantages than they themselves had received. Parents whose only income is from manual labor, who give their boys and girls their time from fourteen to eighteen, with board and clothes, cannot be charged with educating their children wholly at the public expense. They do their share. * * * .

INDUSTRIAL WORK IN A HIGH SCHOOL.

In Milford last year the high school gave a public exhibition of articles made by the pupils. The girls showed specimens of cooking, sewing, embroidering and painting. The boys exhibited, besides some specimens of cooking and considerable fret-sawing, a steam-engine, a telegraph instrument, a model of the gas works, an electrical machine, compound levers, lifting pump and Barker's mill, a model of a derrick. Although this was the first work of the kind, the articles showed ingenuity and skill. This year a still larger amount and variety of work has been done. The money received from admission fees furnished prizes to the most successful exhibitors, and left a balance to be expended for ornamenting the school-room. * * * .

As a common charge has been that the education of the Public Schools and especially of the High Schools tended to dissatisfy the pupils with work, the following direct statements by Mr. Martin, in reference to this accusation, are timely and pertinent. By reference to page 597 of this volume (Appendix I, Paper VII) it will be seen that the statistics carefully kept for a series of years by Mr. Missimer, Principal of the High School of Erie, Pennsylvania, fully confirm Mr. Martin's statements as to the occupations in after life of High School graduates. These facts, so carefully ascertained and recorded, furnish the best possible refutation to the unsupported assertions of the pessimistic opponents of High Schools.

WHAT BECOMES OF HIGH SCHOOL GRADUATES?

In view of a feeling in the community, which has been fostered by inconsiderate writers, that the drift of the high school was away from honest and useful labor, I have everywhere asked,—"What do your students do after leaving school?" The answer is always the same,—"They go to work." More specific inquiry reveals the fact that they enter promptly upon the employments of the communities in which they live. In the cities they go chiefly to the stores, banks and business offices. In the manufacturing centres they go besides into the mills, doing work requiring a higher degree of intelligence. A smaller number are on farms and engaged in trades. That they do not gravitate in large numbers towards the less remunerative kinds of manual labor is doubtless true. That the children of parents employed in such labor aspire to cleaner hands and better clothes is perhaps true. The parents aspire for them, and make sacrifices to send them to the high school, that they may not be mere drudges.

But because they do not become drudges, it by no means follows that they become drones. The principal of the high school in Worcester has taken pains to learn about the graduates of that school. Of those who have been graduated during the last eight years, he can find but one who is not usefully employed. The principal of the high school in Fitchburg has published a list of the graduates of that school since its establishment, with their occupations. All are at work. The same thing has been done by the Superintendent of Schools in Dedham with similar results. The work which the graduates are doing is honest and honorable, and in towns where the school has been long established, they are among the influential members of society.

While this is the natural result of all true education, it is also due in great measure to the direct influence of the teachers. By precept and example they magnify honest work. They help the students to form ideals of character worth striving after. Although moral science, as a branch of study, is seldom included in the course, yet the general influence of the schools is to include sound moral principles, and to develop good moral character.

WHAT THE HIGH SCHOOLS ARE DOING.

In looking over the whole work, as it has come under my inspection, I find that the free public high schools are doing the following work.

They are offering to more than 90 per cent. of the children of the State the advantages of secondary instruction.

They are actually giving such instruction to more than 15,000 pupils.

They are giving classical instruction to more than half of this number, and fitting for college more than 1,300 students.

They are, besides this, acquainting the pupils with the results of modern thought, and with the achievements of modern science, so fitting them to live in the modern world.

They are cultivating the reflective powers, and developing feelings of responsibility.

They are training the mind to look beneath the surface of things,—to hunt for causes,—to discover relations,—to search for truth.

They are furnishing more elevated stand-points, thus securing broader views.

They are presenting higher motives of conduct and leading to self-mastery.

They are holding up true standards of character, and are stimulating earnest effort to attain them.

They are cutting across social distinctions, and preventing the formation of castes.

In a word, they are fitting their students to be useful members of a self-governing Commonwealth.

To say that they have defects is to say that they are subject to the limitations which affect all human institutions. The defects may be remedied, meantime the schools are worthy of the fullest confidence and the most generous support. The State may be proud that from so small a germ as the grammar school of 1635 she has evolved an institution capable of accomplishing so much.

George H. Martin.

III.

EXTRACTS FROM THE REPORTS OF THE SCHOOL AUTHORITIES OF BOSTON, MASSACHUSETTS.

In Part I of this Report, the history of the introduction of drawing in the Boston schools, was given at length, as well as the first indications of probable further progress in industrial education. In this volume is recorded the present situation of the movement and, in this Appendix, it is proposed to show the progress of the movement from 1883 to 1886.

The following is from the school committee's report for 1883:*

MANUAL TRAINING.

The increasing demand in the community for suitable manual education of children whose bent of mind or the circumstances of whose families cause them to leave school early (thereby losing the advantages of the studies pursued in the upper grammar classes) in order to acquire instruction in trades which will qualify them for self-support and aid in the support of their families, is about to be supplied, if the measures, plans, and action, adopted the past year, are practically and wisely directed and carried into operation in 1884.

A subject which has so long engaged the consideration and sense of responsibility of the thoughtful among the public and the school authorities must needs be very prudently inaugurated, in order to ensure success and lead to the desired larger beneficial developments.

That High Schools should be provided by requirement of the State for the mental culture of children, at an expense of about $100 a year, *per capita*, while no tuition for boys has been provided in mechanical handwork to supplement the teaching of industrial drawing, and as a counterpart to High School instruction, has seemed an anomaly and injustice.

The benefits which have resulted from teaching sewing to girls prove the utility and wisdom and feasibility of corresponding manual instruction for boys.

A chief hindrance to every movement in favor of its introduction has been the difficulty of planning a right beginning, in a way to justify the authorities in granting money for its establishment.

The proposition in 1880 to found, at once, a large workshop in accordance with the designs of the well-remembered inventor and mechanician, Mr. Samuel P. Ruggles, since deceased, who had intimated that after it was started he would contribute largely to its endowment, failed, because of the magnitude of its proposed beginning, and the fact that the sum of $15,000, asked for, was deemed too large a venture for such an experiment.

A PRACTICAL PLAN SUGGESTED BY THE RESULT OF THE DWIGHT SCHOOL EXPERIMENT.

Now, what is deemed the right initial plan has been devised, through introducing the learning of the elements of carpentry work by such members of the first-class in the Dwight School as showed an aptitude for it, and whose parents approved of their application to it. The results, as exhibited in the interesting report of the master of that school, were satisfactory and encouraging.

The feasibility of teaching and of acquiring profitable learning in mechanical work, in conjunction with the usual studies, has pointed out the way in which manual training may be taught with advantage, in several schools at the same time, and without interference with the regular school course.

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* "Annual Report of the School Committee of the City of Boston, 1883. Boston: Rockwell and Churchill, City Printers, No. 39 Arch street. 1884. Pp. 276."

The study and practical treatment of this subject, contained in the last annual report of our Superintendent, afforded an occasion to our Board to appoint a special committee for its further consideration, with a view to its incorporation in the scheme of instruction.

The report of the Committee on Industrial Education, which is the product of the opinions of the experienced president and professors of the Massachusetts Institute of Technology, in corroboration of those of the Superintendent and that special committee, so as to adapt them to our schools as they exist, is before the public, and its recommendations have been adopted.

Modifications of the course of study, if found to be necessary in order to prevent overwork or harmful interference, or otherwise to better adjust the branches of instruction, will be adopted, as experience may advise.

The City Council of 1883, among its last acts, made an unanimous special appropriation of $2,500, in response to our application for defraying the expenses for one year of initiating and carrying into effect the plan authorized by the Board, in conformity with the report of its special committee. * * *

Superintendent Seaver, in his report for the same year, which follows that of the committee just quoted, considers the subject at length as follows:

INDUSTRIAL EDUCATION.

In what ways, if in any, can the public schools be made to meet the popular demand for industrial education?

This question may well occupy the attention of those who care for and control public instruction, because such is the growing belief in the importance of industrial education that people are beginning to invoke the aid of compulsory legislation in its behalf. Whether public opinion in Boston is ripe for the introduction of such education into the public schools, under the permissive statute now in force, can best be known by submitting to the School Committee, and through that body to the City Council, some definite project looking to that end. If the project itself should be feasible, discussion would turn on the general question, and the state of public opinion might then become manifest. Such a project I hope to submit, and I trust discussion may show that public opinion is ready at least to make a trial of it.

The importance of this subject will be apparent from a glance at statistics. By the last census there were, in Massachusetts, about 721,000 persons engaged in all the various employments. Of these, almost a half were engaged in manufactures; less than one-sixth in mercantile pursuits; less than one-tenth in agriculture; and less than one-twentieth in all the literary, professional, and civic employments. About one-fifth are classed as domestic servants and unskilled laborers. These exact proportions, of course, do not hold for Boston taken by itself, for here the commercial and professional classes are relatively larger, while the agricultural class counts for nothing. But it is well known that Boston is the centre of very large, as well as very numerous and various manufacturing interests; and that, consequently, about as many of her youth are destined to industrial employments as are destined to all other employments taken together. This is enough to show the importance of industrial education.

Now, if it be admitted as a principle that public education should have some regard to the probable future employments of the young in any community, there can be little question about the propriety of including in our scheme of public education so much of industrial education as can be given better at the public cost than in any other way.

THE BASIS OF INDUSTRIAL EDUCATION ALREADY IN THE SCHOOLS.

Industrial education is even now not unknown in our schools. We recognize it in the drawing, which is taught, not as picture-making,—a pretty accomplishment,—but as a language for the expression of the facts of place and form. It is a training of the eye and hand as skilful servants of the intelligence,—a training of the highest use to artisans of every name. It is also a means of developing a sense of fitness and proportion in design, a way of educating the taste in decoration,—all which is industrial art-education. Then there is sewing, which is taught to girls with a very direct reference to their future employments. Introduced at first as a charity, it is now recognized as a very legitimate charge upon the whole community, because it prepares so many girls to be useful members of society. Many a woman gratefully remembers that she owes remunerative employment, and consequent self-respect and happiness, to the school-instruction she received in this branch of industrial education.

These are recent additions to the school curriculum, but the principle on which they are justified has long been recognized as sound and beneficial.

ORIGIN AND PURPOSE OF THE BOSTON ENGLISH HIGH SCHOOL.

In 1821, while Boston was yet a town, and mainly a commercial town, a school of higher grade was established to meet a want then felt for a form of public education better suited to the needs of boys whose destination was, not college and a profession, but the store and the counting-room. This was the English High School, which has, ever since its establishment, aimed to give its pupils a good commercial education. Not that its course of study has been narrowly limited to that, but that has always been a strong feature. Book-keeping and commercial arithmetic are here taught to the future accountant, and navigation used to be taught to the possible ship-master, for the same reason that drawing is now taught to the future artisan, and sewing to the future dress-maker or house-keeper.

In the Evening High School phonography and in the Evening Drawing Schools draughting are taught to pupils who propose to make direct practical use of their acquirements in their every-day employments.

INFERENCES DRAWN FROM THE FOUNDING OF THE PUBLIC LATIN HIGH SCHOOLS.

But the most conspicuous recognition of the principle that public education should be shaped with reference to the probable future occupations of the pupils, appears in the public Latin schools. Here future lawyers, physicians, and clergymen, teachers, authors, and journalists are helped far along on the direct road to their several professions. This provision for the liberal education of professional men and women results from those generous and enlightened views of the public good which have shaped our educational policy from the earliest times.

FACILITIES FOR ACQUIRING A LIBERAL EDUCATION EARLY RECOGNIZED AS ESSENTIAL TO A CIVILIZED COMMUNITY.

A thorough education for professional men was felt by our forefathers to be a prime public necessity; and this was provided for at the public cost, partly by maintaining schools to prepare boys for college, and partly by grants of money to support colleges. Later the need of a liberal commercial education was recognized; and that, too, was provided for in the public school system. To-day the great educational want of our young people is better preparation for the industrial employments which so many of them are to follow.

The old apprenticeship system is gone. The great revolution wrought by steam and machinery, in all branches of industry, particularly by massing laborers in great establishments and specializing their work, has left little room for the general training an apprentice needs. Such work as an apprentice must do in order to learn thoroughly his chosen craft is not conveniently furnished in the large establishments of the present day; and even if it were otherwise, such work would possess very little value for his employers. The journeyman of limited skill, who is kept continually at one process or part of a process, can earn more for his employer than can the apprentice, who must pass from one process to another for the sake of learning them all. And so it has come to pass that the boy who wishes to become a skilled artisan finds his way blocked by the unskilled journeyman. If the necessity of earning wages constrain him, he submits to the inevitable, learns a process or two, and ends by becoming himself also an unskilled journeyman. This partly explains why the supply of skilled artisans in many branches of industry has become inadequate, and why employers are looking abroad to supply the deficiency.

BROAD APPLICATION OF THE TERM "LIBERAL EDUCATION."

Now, there is such a thing as "a liberal education in the mechanic arts," just as there is a liberal education in science or in letters. It is called a liberal education, because it consists in learning, not the specialties of a particular trade, but the fundamental arts that apply in many trades. As a liberal education in science and letters is what the future professional man most needs, so a liberal education in the mechanic arts, is what the young artisan most needs as a preparation for his chosen trade. But modern shops do not give this. Shall public instruction undertake to give it?

Assuming the validity of the principles which have prompted a generous educational policy hitherto, the question now is, whether it is not in the line of that same generous policy to embrace in our scheme of public instruction such forms of industrial education as have been proved to be practicable and beneficial. In other words, considering the number of people deeply interested, would it not be illiberal and unwise not to provide for such education?

THE RESULTS OF PRACTICAL EXPERIMENTS IN INDUSTRIAL EDUCATION.

If this be granted, the next question is, What forms of industrial education have been proved to be both practicable and beneficial?

The answer to this question is suggested in part by the very interesting and successful experiment made in the Dwight School a year ago. The use of the common wood-cutting tools of the carpenter was taught to some of the boys two hours a week for the greater part of a school year. At the same time, the boys continued their regular school lessons. The experiment proved, if any proof were needed, that boys take to shop-work, under good instruction, with great interest. The progress made was very gratifying, and, in some cases, quite surprising.

But the experiment has been made on a much larger scale in such schools as the School of Mechanic Arts, connected with the Massachusetts Institute of Technology, in Boston, and the Manual Training School of Washington University, in St. Louis. These two schools have been in existence only a few years; but such has been their success in a short time as to leave no doubt that they are meeting a real want in the community.

In both these schools the working time of the pupils is about equally divided between mental and manual training. The former includes the studies of the upper class of our grammar schools, and the English, mathematics, and science of the high school course. The manual training includes carpentry, wood-turning, pattern making, moulding, casting, iron-chipping and filing; forge-work, and the use of some machine-shop tools. Other kinds of shop-work are to be added from time to time, as the need for them may become manifest. In the St. Louis school shop-work fills two hours a day, in the Boston school, three hours. Free-hand and mechanical drawing takes one hour a day. The rest of the time is given to mental training.

In selecting the kinds of shop-work and in the management of shop-instruction, the governing consideration is that all shop-work should be disciplinary in its character, so that the training afforded by it should be what Professor Runkle has called "a liberal education in the mechanic arts,"—not a special preparation for one trade, but a good general preparation for any one of many trades.

He then quotes largely from the catalogue of the Manual Training School in St. Louis, after which he says:

A TECHNICAL PUBLIC MANUAL TRAINING SCHOOL RECOMMENDED.

The foregoing quotations show something of the features and the spirit of an excellent and successful manual training-school,—a school which would be, with some modifications of details, well suited to the needs of Boston. The course of manual training given in this school is not quite so extensive as that given in the Institute of Technology, and not much beyond what might well be undertaken in a public school of similar character.

The central idea of the school, that of combining into one course of instruction shop-work and ordinary school-work in about equal proportions, is not one which can well be carried out in our grammar schools. Even if the purpose for which these schools exist—elementary general education—admitted the introduction of shop-work, which in my judgment it does not, yet the great expense of providing many separate schools with shops, tools, and machinery would make the thing altogether impracticable. Moreover, it should be borne in mind that shop-work is not suited to the strength and stature of boys under fourteen years of age; and four-fifths of the boys now in the grammar schools are under that age.

PRACTICAL SUGGESTIONS.

The best provision, therefore, would be to establish, at some central point in the city, one manual training-school, to equip this school thoroughly for its work, and to admit to it, under suitable restrictions, boys from all parts of the city. A single school, large enough to accommodate two or three hundred pupils, would be the most economical provision that could be made. By changing the classes in accordance with a properly arranged time-table, the shops and tools would be in use all the time, and the instructors, both in shop-work and in ordinary school-work, would be constantly occupied. In this school the boys should continue their ordinary school-work about two hours a day, attend to drawing one hour, and work in the shops two hours more. If the course were made three years long, the intellectual work would cover the upper part of the grammar-school course (or the most essential studies in it) together with some parts of the high-school course. The manual training could be brought up to the point of enabling pupils, on leaving school, to enter many manual employments with advantage to themselves and, therefore, to the community. Not that the school would or could teach any single trade, as would be done in an apprentice school; but its pupils would be so well grounded in the general principles of many trades that the specialties of each trade would be very quickly learned. The experience of the St. Louis school, as well as that of other similar institutions, leaves little doubt on this point.

On the other hand, a manual training-school that should undertake much less than is here suggested would be likely to fail from the mere inadequacy of the means to the end proposed. And this is one reason more for undertaking only one school at first.

PUPILS WHO WOULD FIND A MANUAL TRAINING SCHOOL DESIRABLE.

There are now about two thousand five hundred boys in the grammar schools who are fourteen or more years old. Some of these would be greatly benefited by joining the manual training-school; and their parents would doubtless be glad to have them allowed to do so. Then there are in the high schools, some boys who would be better placed in a manual training-school. Furthermore, there are many boys who are now withdrawn from school at or before the age of fourteen, but whose parents doubtless would be very glad to keep them longer in school, if the prospect were that the school would help them well on towards earning a living by some form of skilled labor.

Out of the three or four thousand boys of suitable age in the city, it ought not to be unreasonable to expect two or three hundred pupils for a good manual training-school.

The outlay necessary for the establishment of such a school need not be very great. The plant for the Manual Training-School in St. Louis, accommodating two hundred and forty boys, cost:

Building complete, about	$33,000
Tools and school furniture	16,000
Land (lot 150 x 106½ feet)	14,400
	$63,400

Boston already has a building. The basement and some of the lower rooms of the new Latin and English High School building would accommodate the school admirably. These rooms could probably be fitted up and furnished with suitable tools and machinery to begin with for ten or twelve thousand dollars.

But it is unnecessary now to go into details. The project I have outlined and now recommend is that there be added to our public school system one manual training-school, thoroughly equipped for its work, occupying a place in the system side by side with the high schools, and open, under suitable conditions, to boys of fourteen years of age, and upwards. This recommendation has been made that there may be something definite and tangible to discuss and to urge upon public attention. If, as is quite likely, a better project can be proposed, then this one will have served a good purpose by calling a better one forth.

SUCCESS ANTICIPATED.

I am aware that such a school would be regarded for a time as an experiment, and properly so; but I believe the experiment needs only to be tried under proper conditions and for a moderate length of time to satisfy the community that money spent upon such a school would be most wisely spent. Said one of the benefactors of the St. Louis school. "I feel better satisfied with the money I have put into the Manual Training-School than with any other money I have invested in St. Louis."

If Boston does not now feel quite ready to put the tax-payers' money into such a school, she might accept the coöperation of any of her wealthy and public-spirited citizens who believe that their money given to such a school would be well bestowed.

The following is the full text of the report* made by the Committee on Industrial Education, November, 1883, to which reference has been made:

REPORT OF THE BOSTON SCHOOL SPECIAL COMMITTEE "ON INDUSTRIAL EDUCATION" (1883).

The present report, now respectfully submitted, is the result of long and careful consideration of a subject whose importance is so very generally recognized at present that it seems hardly necessary for us to repeat the arguments already adduced in its favor. We need not again explain why manual training should be given to boys in our public schools, for this has been repeatedly and convincingly done by committees and friends of the movement at the City Hall and in the School Board, through reports† and newspaper articles, and by word of mouth. What we were requested to do, and have here done to the best of our ability, was to propose a feasible and economical plan of grafting manual training upon our public-school system. In his last annual report the Superintendent warmly advocated this course, and, on the appointment of your committee, showed his hearty interest in the subject by attending their meetings and giving them the benefit of his advice and assistance. Two public hearings were given soon after the organization of the committee, with the hope of obtaining valuable suggestions from individuals known to be interested in the subject. Among those who attended and took an active part in the proceedings were President Walker, ex-President Runkle, and Professor Ordway, officers of the Institute of Technology, who not only advocated manual training in the city schools, but gave the committee some reason to hope that if application were made to the Government of the Institute a large number of pupils from the public schools might be allowed the use of benches in the Institute workshops on certain days of the week. It was found, however, when application was made, that, although the Board took a hearty interest in the matter, and were unanimously in favor of the scheme, it could not be carried out, because the new Institute building would not be ready for occupancy until after the commencement of the school year. Your committee, having been thus reluctantly obliged to give up all hope of realizing a plan which recommended itself as at once efficient and economical, had no choice but to return to their first scheme, which contemplated the obtaining of suitable rooms in the Latin and English High School building, where instruction in bench-work, with simple hand-tools, could be given to boys from neighboring schools who might be allowed to attend on certain days in the week.

Past experience has shown that it is useless to ask for the appropriation of a sum of money sufficient for the establishment of a separate and fully equipped Industrial School, where instruction and practice in the use of tools could be combined with Mathematics, Drawing, and the English branches of a High School course, as in the Manual Training of Washington University, at St. Louis,—a model institution of its kind, whose like, it is to be hoped, will eventually exist in Boston.

Nothing will tend to ensure this so much as an experiment made on the small scale here recommended by your committee, for, at a comparatively trifling expense, the good results sure to follow from more extended operations will be made manifest, and the pressure of public opinion will then become too strong in favor of making them to be resisted.

PLAN OF ORGANIZATION OF MANUAL TRAINING AS A PART OF THE COURSE OF INSTRUCTION IN THE PUBLIC SCHOOLS OF BOSTON.

SUBMITTED BY THE SPECIAL COMMITTEE (OF 1883) ON INDUSTRIAL EDUCATION.

The shop-work adapted to the purposes of general training in the mechanic arts is of two kinds: (1) That which is done at a bench with simple hand-tools: (2) That which requires the aid of machinery and steam power.

The first kind is elementary in character and preparatory to the second: so that it is convenient to speak of the one as Elementary, and of the other as Advanced, Manual Training.

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* "School Document No. 19, 1883. Report of the Committee on Industrial Education. November, 1883. Boston: Rockwell and Churchill, City Printers, No. 39, Arch Street. 1883. Pp. 8."

† See School Document No. 25, 1879.

Advanced instruction in mechanic arts can only be provided for in a central school; but elementary instruction can be provided for on a large scale, and economically, in such a way as to give a two-hour lesson once a week to all the Grammar-School boys who are proper subjects for such instruction.

Suppose a teacher of carpentry, for example, occupying a conveniently situated room, provided with twenty benches, twenty sets of tools, and a quantity of stock, to be visited each half day in the week by successive delegations of twenty boys from the different Grammar-Schools in the neighborhood. Each delegation would simply be excused from attendance at the Grammar School on the appointed half day each week, and attend the carpenter's class instead. The lesson for each delegation would last two hours, although boys interested in their work, and not neglecting their other school work, might be allowed to stay another hour. The rest of each day would be needed by the carpenter for inspection of the boy's work, care of the tools and preparation for the next lesson. Working thus, he could give instruction to two hundred boys in the course of a week (twenty boys each half-day for five days). The room, the tools, and the teacher's time would be in constant use, so that the greatest economy practicable in that regard would be secured.

As to the number of pupils to be taught at one time, experience seems to have shown that twenty-four is practically a maximum. The number twenty is here chosen, because it is pretty clear that available school rooms would not accommodate more than twenty at one time.

How many Grammar Schools could be accommodated by one teacher and in one room, as above suggested, and how many such rooms would eventually be needed for the whole city, are questions which cannot now, of course, be definitely answered. The plan would be to open one room as soon as a competent teacher can be secured; then another, and others, in different quarters of the city, as needed.

The capacity of one room being, say, two hundred boys a week, each neighborhood furnishing that number of pupils would have a room and a teacher.

There are now in our Grammar Schools about 2,800 boys who are fourteen or more years old. Assuming that one-half of these boys desire and are otherwise proper subjects for the proposed manual training, it would take seven rooms and seven teachers to accommodate them. But, after all, this is only a surmise as to the proportions to which the plan may ultimately grow, if it should be managed successfully. At first only one or two rooms should be opened.

Success being secured in these, others could be added as need appeared, and as competent teachers could be found.

These Elementary Manual Training Schools, as they may be called, need not of course confine their work to carpentry. There are other kinds of bench and vise work which are of an elementary nature, and provision for which would be simple and inexpensive. But it would probably be best to begin with carpentry alone, and repeat substantially the course of lessons given in the recent Dwight School experiment.

The cost of one Elementary Manual Training School, such as above described, is estimated as follows:—

Outfit:	
Tools, twenty sets, at $25	$500
Benches, twenty places	200
Miscellaneous fittings and tools	150
	$850
Running expenses:	
Salary of instructor	$1,200
Stock	300
Repairs, replacement of tools, etc	150
	$1,650
Cost of instructing each boy, two hours a week, for one year	$8.25

The advanced instruction in mechanic arts, to be provided for in a central school, would require no other facilities than those already possessed by the city except a suitable forging and machine shop.

As the boys in such a school would spend three-fifths of their time in drawing and in book studies, much as is done in the Manual Training School in St. Louis, they could be well accommodated for that part of the time in the rooms of the Latin and English High School building. There are in that building, beside some vacant class-rooms, four rooms especially designed for the use of drawing classes, only one of which is now so used.

In these class and drawing rooms the Manual Training High School could carry on all its work except shop-work. Here would be its head-quarters.

To complete its accommodations it would be necessary to build, on some lot of land in the neighborhood, a forging and machine shop, one story high, and lighted from the roof. Such a building need not be expensive.

But it is not thought necessary to go further into the details of this part of the plan now, since the question of carrying it out will be decided in most minds by the success with which the part relating to the elementary manual training may be carried out.

In conclusion, the committee submit the following orders.

CHARLES C. PERKINS,
Chairman.
JOHN C. CROWLEY.
THOMAS GAFFIELD.

Ordered, That the City Council be requested to appropriate the sum of $2,500 for the equipment and maintenance of a Manual Training School.

Ordered, That the City Council be requested to fit up rooms in the basement of the Latin-School building where classes from the Grammar Schools can be instructed in the use of simple hand-tools during the ensuing school year.

The following announcement of the actual beginning of the experiment is from the report by the Superintendent for 1884.* Superintendent Seaver says:

MANUAL TRAINING.

The experiment in manual training is to go into operation on the 14th of April, 1884. Accommodations for classes in carpentry have been provided in the basement of the Latin-school building, on Warren Avenue. From ten grammar schools eleven classes, containing in all 220 boys, come and take a lesson once a week. The lesson is two hours long, and boys are allowed to stay a part or the whole of a third hour if they desire. The boys are fourteen or more years old, and are members of the first and second classes in the grammar schools. Between April 14th and the approaching summer vacation not many lessons can be given; the work can only be regarded as a mere beginning. But in September next it will be possible to organize classes that may go through a whole year's work.

As a next step leading towards the establishment of a distinct manual training school open *to graduates* of grammar schools from all parts of the city, it is recommended to open, in connection with the English High School, what might for the present be called a *manual training class*, with ten hours a week devoted to shop-work, five hours to drawing, and five hours to book-work. Such a class would in fact accomplish the first year's work of a manual training school. When such a class is brought into good working order the question of adding other years will follow; and then will come up the question of providing a shop furnished with power and machinery. All these things will come in due time, if the first step, just now beginning, prove successful.

The School Committee is certainly very fortunate in securing the services of one who has been for eight years well known as a successful instructor in carpentry and lathe-work, Mr. George Smith, lately of the School of Mechanic Arts, in the Massachusetts Institute of Technology. Nothing more need now be said than that the experiment begins under the most favorable auspices.

The following report shows what has been done down to 1885:

REPORT BY COMMITTEE ON MANUAL TRAINING SCHOOL.

The Committee on Manual Training School, who were instructed, April 28, to consider and report upon the feasibility of providing instruction to boys of the public schools in printing, carpenter-work, and shoe-making; and to girls, in printing, cooking, housekeeping, and laundry-work; and what appropriation may be necessary therefor, submit the following report:—

The committee have postponed this report as long as possible, for obvious reasons. They have given one hearing, to which were invited all who have taken an interest in the past in Manual Training.

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* "School Document No. 4—1884. Fourth Annual Report of the Superintendent of Public Schools of the City of Boston. March, 1884. Boston: Rockwell and Churchill, City Printers, No. 39 Arch Street. 1884. Pp. 72."

There were present Mrs. Hemenway and Fiske, Misses Homans and Pingree, also Messrs. Swan, Dutton, Hill, Chase, and Hardon, masters respectively of the Winthrop, Hancock, Comins, Dudley, and Shurtleff schools.

Later we held a conference with the masters of the Grammar Schools for girls in the city proper. All of these girls now have the privilege of receiving lessons in cookery.

We also visited Mrs. Hemenway's vacation school in cookery at Tennyson street, and were surprised by the great popularity of the work. Many earnest, eager applicants were crowded out.

This school, or "The Boston School Kitchen No. 1," is now being conducted, under the direction of your committee, at Mrs. Hemenway's expense. She will pay the expense of a teacher and of the materials until July, 1886, when she desires to present "the plant" to the School Committee of Boston.

The girls of the Winthrop, Franklin, Everett, and Hyde schools, in all 150 per week, attend this school. The North Bennett-st. School of Cookery is conducted by the North Bennett-st. Industrial School. The girls of the Hancock, Wells, and Bowdoin schools, about 125 in number attend this school. We are about adding another class. This school will also accommodate 150 pupils per week.

Both of the above schools began their regular course Nov. 2, 1885,—seven weeks ago.

We have had a carpenter-shop under the Latin School since May, 1884.

These three schools are being conducted as experiments, under the charge of your committee.

Superintendent Seaver, in his annual report of 1883, says:—

"As many of the youth of Boston are destined to industrial employments as are destined to all other employments taken together" * * * "The professional man, the lawyer, doctor, clergyman, author, teacher, etc., have been helped far along on the direct road to their several professions" by the community in the Public Latin School for 250 years, or almost since the foundation of the Massachusetts Bay colony. Talent for the store and counting-room has been encouraged at the English High School since 1821.

The girls have had the same opportunities as the boys of late years.

The small minority has received great advantages, while the great majority—the workers with the hands and brain—have received no encouragement until within the last year and a half.

Given good mechanics, a country prospers. Professional men are not so necessary. No country has ever had enough of good workers with the hands. There is almost always a plenty of professional men. We should especially encourage "the worker with his hands," because the common people are the foundations of republican government. If the people are broad of mind those foundations will be broad and immovable.

THE STRENGTH AND PURPOSE OF THE PUBLIC SCHOOLS.

The bottom principle on which our system of public education depends is the future profit and welfare of the State, through the lifting up of its citizens into better men and women.

For 250 years we have appropriated a large part of the people's money to make a few lawyers, clergymen, doctors, and the like. It would be much more profitable to appropriate some of this money for the benefit of the great mass of the people, through Manual Training.

The three existing schools already mentioned have been an unqualified success every day of their existence. Every pupil has been and is an enthusiast. Their heart is in their work. That is always success.

If the common studies of our schools, i. e., grammar, arithmetic, geography, etc., were optional, and were taught only at a distant point of the city, how many boys and girls would come? Yet our Manual Training, in its incomplete condition, draws its volunteer boys and girls from distant parts of the city, rain or shine.

Says a prominent English educator. "That the vast majority of mankind must work for daily bread proves conclusively that work for daily bread is a noble order of life, as it is in accordance with a natural law."

This natural law, the nobility of labor, should be impressed upon all our boys and girls, because in many quarters the opposite obtains, and is working great harm. Usefulness is always honorable.

The building up of the future "worker" is not, however, the greatest benefit that will accrue to us from the establishment of Manual Training Schools. The greatest benefit is the moral benefit. Manual training has a great moral influence upon our boys and girls when their minds are most plastic.

Nothing develops a boy or girl, a man or woman, like responsibility; manual training compels responsibility. The pupil must depend upon himself. All mistakes are his own. He cannot shoulder them upon another. He is constantly brought face to face with his own deficiencies. Even self-love cannot close his eyes to them. Moral and mental improvement must come. A better, broader man or woman steps forth.

We expect that in time we shall arrive at a central school, similar to our High Schools, where Manual Training may have a fair chance to show its full merits. Then all who desire may attend. Now only those can attend the Manual Training classes who can accomplish in twenty-two to twenty-three hours the school work laid out for twenty-five hours. Thus many who need this training most are shut out.

We recommend the establishment, next September, of a School of Cookery in South Boston, because in no part of Boston would more profitable results follow.

We recommend a carpenter-shop next September, at the Dudley School, Roxbury, because of the continuous demand from that section.

We recommend that the School Board assume, next September, the conduct and expense of School Kitchen No. 1, in the Tennyson-street School building, the expense of which is now paid by Mrs. Mary E. Hemenway, who has been the zealous pioneer of this particular branch of the work. Towards the carrying out of the above recommendations we beg to offer the following order:

For the Committee,

JAMES S. MURPHY,
Chairman.

Ordered, That the Committee on Account be requested to include in their estimate for the next school financial year the sum of $6,000, for Manual Training.

The regular appropriation has been $2,500 per annum for the last two years.

The following extract from the Annual Report of the School Committee shows the situation at the close of the year 1885:

INDUSTRIAL EDUCATION COMMITTEE'S REPORT FOR 1885.

The Manual Training School finished its first school-year in June last. The committee having charge of the school report an increased interest on the part of pupils, some of whom were anxious to continue their instruction a second year; but this could not be permitted, owing to the limited accommodations.

During the year the Board has provided for the permanent maintenance of the Manual Training School, and has provided for the appointment of a regular standing committee of the Board to take charge of the school.

Early in the year the attention of the Board was called to a petition from Mrs. Quincy A. Shaw, asking that pupils of the North-End schools be permitted to attend the North-End Industrial Home during a portion of the school-hours.

The Committee on Manual Training School, to whom the matter was referred, reported (School Document No. 3, 1885) that the matter should be looked upon as an experiment, one of the results of which would be to inform the Board on the question of providing extended facilities for industrial training to the pupils of the public schools.

PUBLIC SCHOOL PUPILS PERMITTED TO ATTEND PRIVATE INDUSTRIAL SCHOOLS.

Upon the recommendation of this committee the Board voted that the children attending the Eliot and Hancock Districts, whose parents or guardians so request in writing, be permitted to attend, on probation, the North-end Industrial Home, two hours a week. On the recommendation of the Committee on the Manual Training School, the liberal offer of Mrs. Augustus Hemenway to maintain a Cooking-School, at her own expense, in the Tennyson-street school-house, until July 1, 1886, was accepted, and the Board, at its meeting October 12, 1885, passed the following order:

Ordered, That the girls of the Winthrop, Franklin, Everett, Hyde, and Wells schools, whose parents or guardians so request in writing, be permitted to attend, on probation, the Tennyson-street Cooking-School, under the direction of the Committee on Manual Training.

Subsequently the girls of the Horace Mann School for the deaf were permitted to attend the Tennyson-street Cooking-School, and the girls of the Wells and Bowdoin Schools were permitted to attend the North Bennett-street Cooking-School, under the same conditions.

The schools were fitted up and organized, and the committee in charge were authorized to prepare and print rules and regulations governing attendance of pupils in these schools. The attendance of the Tennyson-street Cooking-School is about 150 pupils per week, and at the North Bennett-street Cooking-School, about 125 pupils per week.

The special committee in charge speak in the warmest terms of the unqualified success of the industrial schools, and recommend that other schools be established during the coming year, in other sections of the city. It is unnecessary for us to state the arguments in favor of the maintenance of industrial schools. The need for their existence was recognized long ago, and the work that remains is to provide the best possible means of giving instruction in manual training to our school-children. Sewing and drawing have steadily worked their way into notice, and have secured permanent places, in the school curriculum. The same must be the case with the industrial schools, and we feel confident that the liberality of our citizens in sustaining the public schools up to the high standard they have occupied for years will be extended as readily in the cause of industrial education.

IV.

INDUSTRIAL EDUCATION CONSIDERED BY THE SCHOOL AUTHORITIES OF NEWPORT, RHODE ISLAND.

In the Annual Report of the School Committee of the City of Newport, Rhode Island, for 1882-'83,* occurs the following reference to the subject of Industrial Education:

> The subject of industrial or manual education is receiving considerable attention in some quarters. In view of the fact that so many of those in the public schools are to find their means of support later in life in some form of manual labor, it certainly is a question worthy of consideration as to whether some attempt should not be made by the public to train the hand as well as to educate the head. The disinclination in these days to pass through long apprenticeships, the lack of skilled labor in almost all of the forms of mechanical employment, suggest the importance of the subject. Its thorough discussion is not here called for, nor is our city in a position to assume leadership in the solution of this question. It will, perhaps, suffice, if we bear it in mind, having in view that the not distant future may make the question a practical one.

This is supplemented by Superintendent George A. Littlefield in his report as follows:

MANUAL TRAINING.

> The subject of manual training, to which attention is called in the report of the School Committee, is an interesting one. We already give instruction in the useful study of drawing, and a natural step from that, which has been taken in many places, is to introduce sewing for the girls, and the use of simple tools for the boys. The importance of sewing has already been forcibly presented to the Board in a letter from the Newport Charity Organization. It is no uncommon thing in schools where sewing has long been taught to meet young girls eleven or twelve years of age, who, according to the statement of their teachers, can cut and make every garment they wear to school. If this is the case, when we hear so much about the helplessness of young women who have not learned to sew, would it not seem wise, if necessary, to sacrifice the involved processes of banking and the details of South American geography, in order to gain an hour a week for so practical a branch as sewing.
>
> With regard to the practicability of giving the boys instruction in the use of tools, the following quotation is submitted from the recent able report of Superintendent Harrington of New Bedford: "Some Boston gentlemen, taking their cue from Europe, subscribed money enough to fit up an unoccupied school room for exercises in mechanical handwork, the boys of the Dwight Grammar School were the pupils, and the first attempt was made to graft a course of manual instruction on the public school system. The room was cleared of its furniture and supplied with work benches and wood-working tools sufficient for eighteen boys, to whom was also assigned a small amount of lumber. They were placed under the charge of a special teacher, a carpenter and builder, who exacted strict discipline, marked all the work done by the boys, and kept a record of the same. The daily programme was written out each day on the blackboard, and strict compliance with it required. Two classes were taught, each having two hours a week. As specimens of the work done, the boys were taught to drive nails; to nail on a line; to use different

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* "Annual Report of the School Committee of the City of Newport, R. I., together with the Report of Head Master of the Rogers High School, and the Eighteenth Annual Report of Supt. of Public Schools, 1882-'83. Newport, R. I.: John P. Sanborn, Printer, 1883. Pp. 212."

kinds of planes; to joint the square edges of a board; to use the gauge, the cutting and splitting saws; to use the chalk line and different kinds of chisels; to fit and nail boards together; to make a mortise and tenon and to fit them together; to use sand-paper, glue, etc.; to use the bit and bit-brace, and various other operations in wood-working."

"Mr. Paige, the master of the Dwight School, reports that the experiment has been a complete success. The boys have been intensely interested in the work, never tardy, never absent; but, on the contrary, have been frequently at work long before the time of beginning. And as to the effect on their mental study, it has seemed to stimulate their minds. It has made them, if anything, better scholars than they were before. To quote his own words: 'I consider that the results go far to prove that manual training is so great a relief to the iteration of school work that it is a positive benefit, rather than a detriment to the course in the other studies.'"

From the report made by the Superintendent the next year, 1884–'85, upon this subject which he had been directed to investigate, it will be seen that his researches have convinced him that the proposed training in public schools, in the elements of industries, is both feasible and desirable. He says:

INDUSTRIAL EDUCATION.

The subject of industrial education upon which the Superintendent was instructed by the School Board to make a brief report at this time, has been carefully considered. The elementary manual training schools in New Haven and Boston have been visited, and many essays and reports upon the subject have been listened to or read. The evidence seems conclusive that instruction in sewing and in the use of mechanics' tools for the girls and boys respectively, is a most useful line of work for public schools to undertake. Before introducing it, we should make sure that in our schools as thoroughly as in any others, the subjects of the present curriculum are taken up from the standpoint of *things* rather than *words*, and then we may consider instruction in elementary bench or forge work as simply an extension of that object teaching which already characterizes the most interesting and profitable portions of our school work. For example, the gifts of the Kindergarten, the primary modeling in clay, the concrete portions of arithmetic, the model and geometrical drawing, natural philosophy and chemistry as taught by experiment in the high school and as they should be taught to a simpler extent in the grammar school, the collection of cabinets interesting to the student of geography and history, etc., etc. In point of utility, it is found that the training of the eye and the hand in an industrial way affords a much needed mental discipline, and invigorates by practical application much of the otherwise lifeless information gained from books. While it is not intended of course to give in the schools so much training as is required in the particular trades, it is believed to be entirely feasible to give without interruption of the present course such a command of the common wood and iron working tools as shall reveal to a pupil any latent mechanical skill he may have, and shall prove in many cases an acceptable substitute for the experience formerly gained under the apprenticeship system. The spirit of our institutions forbids us to forecast the life work of any lad, but whatever it may be, a knowledge of materials with dexterity in the use of tools can never come amiss, and it may serve to counteract the present morbid tendency to regard manual labor as in some way discreditable.

SEWING FOR GIRLS AND MANUAL TRAINING FOR BOYS RECOMMENDED.

It is therefore recommended that the City Council be requested to make provision in the next annual budget for instruction in sewing for the girls of the grammar schools and in carpentry for the boys above the third grammar grade. Sewing could be taught in the school rooms one hour a week outside of the present school hours at an annual expenditure, for the salary of a competent special teacher, of about $300. The engine house proposed to be vacated just west of the Coddington School-house would make an admirable carpenter's shop, and if it could be secured the remaining expenses for the first year would be about as follows: tools, fifteen sets at $25, $375; benches $150; incidental fittings $100; stock for lessons $200; salary of instructor $800; total $1,625. If the superintending carpenter of the school department, however, could give the instruction, the cost would be materially lessened. After the first year, the running expenses for instruction, stock, and repairs would be about half the cost for the first year. If the engine house should be secured, the lower floor could be furnished with fifteen individual benches, each four or five feet long, fitted with a vise and with a drawer underneath containing the principal handsaw, planes, chisels, etc. Two hours a week of attendance at the shop should be required of all able bodied boys in the classes named until at least they had acquired a certain minimum of proficiency in the use of the prescribed tools. The hours best available for the boys of the first and second grammar classes would be from 11½ to 12½, from 1 to 2, and from 4 to 5. The high school boys could occupy the shop from 2 to 4. A company of about fifteen could be taught at once, and there would probably be boys enough to occupy the instructor during the time mentioned. There would soon be a demand no doubt for an evening class, and if the day experiment were successful such a class would be well worthy of opening as well as one in the closely allied subject of mechanical drawing. In the manual schools visited by the Superintendent the following features seemed objectionable: they were conducted in basements which were apparently damp, the sessions were held in the regular school hours, and the attendance was optional including only the bright pupils who as was supposed could spare the time for it. The instructor of such a school should be a skilful carpenter, intelligent, and capable of expressing himself clearly. At the outset he should inspect the management of one or two similar schools in other cities. Their method requires him at the opening of each lesson in the presence of the boys to execute upon his bench the precise work for the day which they afterwards imitate upon their several benches under his oversight. The course in the Boston school last year included lessons upon the use of the splitting and cutting-off saws, the different bench planes, the making, testing and use of mitre box, common and blind dovetailing, mortises and tenons, key tenons, etc. Among many useful things made were small cabinets with drawers, large tool chests, dove-tailed and glued together, with beaded trimming and paneled cover, small tables with drawers and square tapering legs, etc. The aim is not to make salable articles, but judging from the specimens seen, many boys early display the power to turn out surprisingly fine work.

V.

SCHOOLS OF NEW HAVEN, CONNECTICUT.

EXTRACTS FROM THE ANNUAL REPORTS OF THE SCHOOL AUTHORITIES OF NEW HAVEN, CONNECTICUT.

An account of the latest results of the experiments in introducing the elements of industrial training in the schools of New Haven, undertaken in 1883 by Principals Camp and French, in their respective schools, is given in Chapter XIII of this volume. (See page 138 *et seq.*) The following quotations from the official reports will show the progress of the movement from 1883 to 1885, inclusive.

In the Report of Superintendent Samuel T. Dutton, under date of August 31, 1883,* the announcement is made of the proposed experiments by Messrs. Camp and French.

Superintendent Dutton says:

INDUSTRIAL EDUCATION AND THE KINDERGARTEN.

There is a new element in the educational atmosphere of this country which cannot well be overlooked. The claim that our public schools teach too much that is theoretical and disciplinary, and offer too few advantages to those wishing to acquire skill in mechanical labor, is not new, but it has recently been pushed with such energy as to arrest the attention of thoughtful persons. It is said on good authority that the demand for skilled mechanics is so great relatively as to warrant some addition to or modification of our public school training, so that the ambitions and energies of boys may be given the proper bent, and so the industrial and productive interests of the nation may keep pace with other forms of growth.

TECHNICAL CLASSES OPENED IN NEW YORK BY CARRIAGE BUILDERS' NATIONAL ASSOCIATION.

The Carriage Builders' National Association of the United States, having opened a school in New York City for the advancement of technical knowledge, in a circular recently issued declares that "the advance already made in the mechanical arts in this country calls for a higher standard of taste and skill than heretofore, and there is every evidence that a still greater demand for skilled workmen will arise from year to year, in order that in our rapidly increasing productions we may successfully compete in the markets of the world with the manufacturers of other countries. At present we are dependent in great measure upon artizans educated in their trades abroad, but the number of this class seeking our shores for employment is lessening every year, and has almost entirely ceased in many trades calling for the higher skill. We deem it highly important to reinforce the ranks of mechanics by a system of public school instruction which shall earlier fit boys to enter into trades with some assurance that their preparatory studies are likely to assist in making them intelligent and skilled workmen."

This is a fair specimen of the opinions expressed on every hand. It will hardly do at present to talk about Manual Schools supported at public expense. Our system costs enough already. I believe, however, that a few years will develop a plan whereby one or more industrial departments can be opened, with teachers trained in the best technical schools, and that the plan need cost nothing additional; for boys and girls enrolled in these departments would be entirely withdrawn from others. Through the enterprise of Messrs. Camp and French, experiments are to be tried in the Dwight and Skinner Schools during the coming year, which will awaken much interest and will deserve hearty encouragement. I would recommend that a small appropriation be made in order that the experiment may be fairly made and the result honestly estimated.

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*"Annual Report of the Board of Education of the New Haven City School District for the Year ending August 31, 1883. New Haven: Tuttle, Morehouse & Taylor, Printers. 1883. Pp. 120."

SEWING IN PUBLIC SCHOOLS.

I cannot refrain from expressing the high opinion I have formed of the endeavors so long and perseveringly carried on to teach sewing to poor and neglected children in our ungraded schools. The fact that for nearly a quarter of a century philanthropic ladies have been encouraged to carry on this work, asking no aid from the public funds, is to me sufficient proof of its genuineness.

RELATION BETWEEN THE KINDERGARTEN AND INDUSTRIAL EDUCATION.

The close and natural connection between industrial education and the Kindergarten justifies my introducing the topic here. "We must begin at the beginning," said Froebel, "too much has to be undone in later years that has been done wrong from the outset." The general purpose of the system to secure the healthful development of all the faculties of children of three years old and upwards is well understood. Many larger cities, like St. Louis, Milwaukee, San Francisco, have hundreds of Kindergartens, supported partly by charity and partly by public money. In Boston the munificent charity of one lady, Mrs. Shaw, provides more than $50,000 annually for the payment of teachers, while the Board of Education furnishes necessary rooms in various school houses. If the efforts being made in this city to establish one or more charity Kindergartens are successful, I hope the use of some unoccupied rooms in the district may be granted.

In introducing this subject I am not seeking to add another expensive feature to our system. True Kindergartens, if they exist at all, will for a long time at least exist as a form of charity. It is, however, of supreme importance that our teachers as a class become familiar with the genius and philosophy of the system, and I see no better or cheaper way of accomplishing this end than to employ one Kindergartner as a teacher in the new Training School, and this step is respectfully suggested for the consideration of the Board.

In the report of the succeeding year* the Superintendent gives the history of the first year's experiment as follows:

MANUAL TRAINING IN NEW HAVEN (1883–1884).

The experiments which have been tried in the Dwight and Skinner Schools during the past year, and the good degree of success that has attended them, naturally suggest the question whether manual training cannot become more distinctly a feature of public school education in this city. The question is a difficult one, as all have found who have ventured to speculate upon it. It cannot be handled successfully from a narrow or simply utilitarian point of view. It is easy to deny the expendiency of such training, and to ridicule the idea of dividing the interest of school boys between the three R's and the hammer, the saw, and the jack plane. On the other hand, some make haste to clamor for manual training in schools who do not weigh sufficiently the difficulties which such an enterprise presents, neither do they seem to comprehend its true purpose. They join in the popular cry for something practical in the schools, and would seem to imply that the knowledge of a few tools will at once open to a boy the highway to success. To ask for any considerable appropriation of public money for the support of a new feature in our schools to please a few chronics who are always complaining of the old and clamoring for the new, or to furnish gymnastics for a few boys, would certainly be indefensible. It will readily be agreed that if these industrial experiments are to be encouraged, and further expense is to be incurred, the case must be pleaded on the broadest educational grounds. It must be seen that something is actually wanting in the present curriculum to call out all the latent energies of a boy and give him the most symmetrical development of mind and body. To undertake the teaching of trades in the school room, or to emphasize the importance of any of the manual arts to that extent which would give a bias to the tastes of a boy or turn his attention to any particular vocation, would do violence to well accepted educational principles.

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*"Annual Report of the Board of Education of the New Haven City School District for the Year ending August 30, 1884. New Haven: Tuttle, Morehouse & Taylor, Printers. 1884. Pp. 109."

TECHNICAL TRADE SCHOOLS OF GREATEST VALUE, BUT NOT MODELS FOR FREE PUBLIC MANUAL TRAINING SCHOOLS.

Those Technical Schools of Europe which are supported for the avowed purpose of fostering certain industries or branches of skilled labor, as for example the Technical School of Manchester, England, opened the past year, or those institutions run in the interest of guilds or great manufacturing interests, like that one supported in New York City by the Carriage Builders' Association—all these will prove of great value to the industries which they foster, and will be a mighty factor in strengthening the productive resources of a nation. But as educational institutions, they are necessarily narrow in scope, and afford but little help in the solution of the problem before us. One principle is generally agreed upon by all who would urge manual training in schools, and that is, that *no trade can be taught.* This dictum, although negative in form, when considered in the light of pedagogics is positive and full of meaning. It points to a broad and harmonious development, rather than to the narrowing of faculty. It rests upon the supreme fact that body and mind act and react upon each other; that any act is a thought expressed; that the application of the hand and eye to systematic and artistic pursuits produces a reflex benefit to the mind of the worker; that hand work joined with brain work awakens spontaneity of feeling, strenghtens the will, and insures a maximum of power.

As this is a basal principle and one to be kept constantly in mind throughout this discussion, I will quote from several authorities to show how well it is recognized by those competent to speak.

Short quotations follow from the statements put forth by the authorities of the Boston, Chicago, and St. Louis Manual Training Schools; here omitted, because given at length in the accounts of those schools.

One who carefully inspected the large exhibits of the technical schools made at the late meeting of the National Educational Association,* writes that "a noticeable feature was that teachers seemed to be trying to bring out the inventive faculties of pupils, rather than to have them copy a certain set of models." A recent article in the "New Englander," prepared by Prof. H. W. Farnam of this city, emphasizes the educational value of manual training, and says: "It develops a fondness for work; it leads children to create, rather than simply to assimilate; it strengthens the instincts of coöperation; it brings out, in a more concrete and distinct manner than the dry maxims of abstract ethics, the difference between right and wrong; and in doing this it incidentally gives to the boys in our public schools educational elements which will be of special use to them in the careers which they will necessarily follow." Mr. Judd, the efficient instructor of the boys at the Dwight School, made a remark to a stranger in my hearing which seemed to embody the pith of the same principle. In answer to the question "What good will such training do a boy?" he replied, "It will bring out what there is in him."

PRACTICAL RESULTS OF THE EXPERIMENT IN NEW HAVEN.

Now, giving up all idea of teaching trades, and regarding facility in using a few tools as a rather commonplace accomplishment, is there enough of disciplinary value in such training to warrant its continuance or extension in our schools? Instead of affirming positively that such is the case, let us see what results the experiments made have yielded. In each of the Dwight and Skinner Schools a large basement room was fitted up with benches and supplied with tools sufficient for a dozen boys to work at once. Each boy attended twice per week for an hour. At the Dwight School sixty different boys selected for superior scholarship received training, and at Skinner, about thirty were thus fortunate. Messrs. Judd and Loper, the respective janitors of these schools gave the needed instruction, and did much to make the enterprise a success by their interest and zeal. A thorough course in plain carpentry was given, and many useful and ornamental articles were manufactured. More important than these visible results is the effect upon the bearing and scholarship of the boys thus trained. The principals of both schools are emphatic in saying that the effect was salutary both upon their mental life and manly bearing. Several parents testify to the same result and are, without exception, anxious to have such training continued. It is said that those receiving the training, being the older and more influential boys of the school, exhibited a positive interest in their daily work, and a propriety of conduct which was helpful in elevating the standard of tone in the whole school. Thus, for a maximum expense of $200 for each class, one-half of which sum was appropriated from school funds, we have these definite and most desirable results, to say nothing of skill acquired n carpentry.

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* Held at Madison, Wisconsin, July 15-19, 1884. Attended by more than 6,000 persons.

SUGGESTIONS AND RECOMMENDATIONS.

In view of these telling facts, and since this form of education is fairly in the stage of experiment, it would seem proper for the Board to consider seriously the wisdom of providing for a still broader application of the plan, so that a still larger number of teachers and parents can judge of its practicability. Without arguing the case, or going far into details the following scheme is suggested: To let a group of twelve or fifteen boys from each of the Grammar Schools of the City spend one afternoon per week in the manual training school. The room and appointments at the Dwight and Skinner Schools are ample for the purpose, and the plan would simply require that the boys from other schools should travel the longer distance once each week. The groups from the several schools would of course be assigned to the school nearest their own. It could not be asked or expected that the instruction could be given for so small compensation as last year. The janitors should receive from $200 to $300 each, in order to enable them to employ extra assistance which they would be obliged to do. An allowance of $100 should be made for each school for lumber and tools, so that, at the outside, $80) would cover all expense and fairly compensate the instructors. The legal difficulty, which has hitherto been a convenient bar to such a project, has fortunately been removed. The statute which designated the studies to be taught in the common schools of this State, was, at the last session of the legislature, so amended, at the instance of Hon. J. D. Plunkett, as to include "Manual Arts." This difficulty being removed, I believe public sentiment will sustain the Board in taking this step in advance. Some will say that the plan is faulty, as only a few will reap the benefit of it. But one hundred boys from different parts of the city, selected by their several principals on the ground of good scholarship, will be a good basis for the experiment, and close students are often persons of highly wrought nervous temperament, who especially need relaxation and physical training. Those whose surplus energies are spent in out-door sports, or who have active duties out of school, have less need of manual training. The fact that the dignity of labor may thus be popularized, and that many boys not members of these classes will be inspired "to do something," is a strong argument in favor of the plan. It is the industrial and industrious spirit that we want in our schools, and in the community as well, so that honest labor may be not only respectable but honorable.

It must be counted a misfortune that popular intelligence does not yet grasp the principles which underlie an education which begins in the Kindergarten, and carries the industrial and productive idea through all grades. There may be some truth in the charge, that only half the child has been educated, that the other half, which is character founded on a body trained to action, and a will invincible against wrong, has been neglected. Is it not possible that the time has come to broaden the foundations of our educational structure, so as to make the school training do in part for boys in the city, what is done for boys in the country by the nature of things?

MECHANICAL DRAWING.

The introduction of this branch into the upper grades of the Grammar Schools and the High School by Prof. Louis Bail is an important step towards a more industrial education, and has given a new impulse to the subject of drawing. Although the study is made optional, over 500 boys have already availed themselves of the opportunity here afforded. Prof. Bail says, "In the month of May, I commenced a complete course in mechanical drawing in all the Grammar Schools. giving the boys of the two upper rooms a lesson of one hour, each alternate week. The regular teacher is required to give the scholars at least two hours instruction every other week in Mechanical drawing, and thoroughly review all the problems and thus secure considerable practice in the use of the mathematical instruments."

SEWING.

> What better form of manual training for the girls than plain sewing? This subject was once before the Board and referred by them to the Committee on Schools and Superintendent. My report is here presented, to wit, that it would be well for one or two Principals of Grammar Schools to inaugurate experiments in one or more grades, say the fifth and sixth. Let them begin by ascertaining how many know how to sew. If I may use statements made by several city superintendents as a basis of prophecy, I feel sure that few will be found, whether of the rich or poor, who understand the practical use of the needle. I would also report that the teaching of sewing as hitherto conducted in the Fair Street and Goffe Street Schools should receive some substantial recognition and support at the hands of the Board. The same beneficent amendment to the statute before alluded to extends its favoring hand in this direction.

A careful perusal of these reports by Superintendent Dutton recalls the noble series of reports made by Horace Mann, forty years ago. A like high ideal of the purpose to be attained in teaching, a mind open to new movements and to improved methods, a readiness to discard time-honored customs if satisfied that they are hindrances rather than helps, mark the utterances of this Superintendent of our day, while the credit freely given to teachers, and their consequent *esprit du corps*, make the admitted excellence of the public schools of New Haven easy to understand. While the novel methods of education adapted to changed conditions of life are hospitably entertained, the old methods of proved excellence are by no means discarded. The statements in regard to High Schools in this report are worthy of careful consideration.

The 1885 Report of the New Haven Board of Education * contains the following announcement giving very practical proof of the increasing interest in the experiments of industrial education on the part of one public-spirited citizen at least:

> Mrs. Lucy H. Boardman, during the past summer, placed in the hands of Trustees the very generous sum of ten thousand dollars, the income from which is to be hereafter applied by the district for instruction in the industrial arts. Mrs. Boardman has also paid into the treasury the sum of five hundred dollars for like instruction the coming year.
>
> Perhaps other benevolent persons will greatly add to this trust fund, so that while a good work is being done, there will be no large expenditure by the district in this line of instruction.
>
> It is perhaps proper to say in this place that if the district shall give very general instruction in this direction, a suitable and central building should be provided with necessary tools and equipments. The basements of the Skinner and Dwight School building have thus far been used for this purpose, but they are inconvenient and poorly adapted to this kind of instruction.
>
> This subject will claim the attention of the Board at an early day.

Superintendent Dutton follows with a somewhat detailed account of the year's work in Mechanical Drawing and in Manual Training.

DRAWING.

> Some changes have taken place in the teaching of drawing. During the year ending in April, Prof. Bail taught mechanical drawing to the boys in grades VII and VIII in the Grammar Schools, and to the fourth class in the High School. At the opening of the new school year in May, the third class in the High School asked the privilege of continuing the study, which was granted. As each class in mechanical drawing demands one hour of the time of the instructor, his opportunity for visiting the lower grades is reduced. This has led to an arrangement whereby he will visit classes below grade VII once each term, the teacher being required to give the regular lessons as before.

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* "Annual Report of the Board of Education of the New Haven City School District for the Year ending August 31, 1885. New Haven: Tuttle, Morehouse & Taylor, Printers. 1885. Pp. 116."

As it is proposed to hold an afternoon session for each class in the High School, a full hour can be given to mechanical drawing without breaking into the morning session, which is quite short enough already. As an aid to the classes in mechanical drawing, Prof. Bail proposes to give, outside of school hours, lessons in clay modeling.

The results in free-hand and object drawing have been fully up to the high standard which has long characterized the work in this department.

MANUAL TRAINING.

The nature of the instruction given in the shops of the Dwight and Skinner Schools was fully explained in the last annual report. At the same time a recommendation was made that the work be extended by having classes of boys from adjacent grammar schools spend one afternoon each week in manual training, using the rooms and tools already provided. At a meeting held in September the Board approved the proposition and appropriated $600 for its support. The janitors of the Dwight and Skinner Schools, Messrs. Judd and Loper, have each received $15 per month in addition to their usual wages. This was but meagre compensation for the extra labor that was entailed. The direction of the work while in progres is but a small part of the instructor's task. He must procure lumber, mark out and plan the work for each boy, keep the tools in order and make repairs when needed. As each instructor had as many as five classes, he was obliged to carry in his mind the progress made by each class, and be ready at each successive lesson to take the next step in advance. Classes of twelve boys each, selected by the principal, generally on the ground of good scholarship, were detailed from the Webster, Washington, Wooster, and Eaton Schools.

PRINCIPAL CAMP REPORTS THE RESULT OF MANUAL TRAINING IN THE DWIGHT SCHOOL FOR ONE YEAR.

Mr. L. L. Camp, principal of the Dwight School, makes the following statement regarding the result of the year's work:

"Forty-eight boys have enjoyed the privilege of manual training each week, and as the classes can be changed every two months if the principal thinks best, we have actually had during the past year seventy-three different boys from the Dwight School, twenty-five from the Webster, and twenty from the Washington School, making one hundred and eighteen in all who have had the opportunity of working two months or more during the year and with hardly an exception they have all seemed to appreciate the privileges and improve their time so as to become quite handy in the use of tools. While teaching the correct use of tools has been our chief object and aim, yet, in addition to the numerous small articles and blocks upon which practice has been given, the pupils have made 14 moulding tray tables, 12 sewing tables, 74 stools, 4 small cabinet boxes, 3 black walnut book shelves, 2 tool chests, 2 easels, 1 book-case, 1 lap cutting board, 1 knife tray, 1 inlaid checker board, 4 drawing boards, besides a great number of small articles. There are also now in the process of manufacture numerous tables, stools, boxes, book-cases, etc., so that there is a real money value to the work the pupils have done, though that is not the object aimed at in the formation of the industrial classes.

"While the boys have been thus engaged in the shop learning the use of tools, the girls have not been neglected. A class of forty or fifty meet every week in the recitation rooms, under the charge of one of the lady teachers, and learn all kinds of sewing, knitting, crocheting, embroidery and other work suitable for girls. We also have classes formed in wood carving, repoussé work and modeling.

"We are now extending this industrial work or manual training through all our grades, selecting the kind of work best suited to the age and capacity of each pupil, from the kindergarten to No. 12.

"I desire to state that many of the parents take a deep interest in the industrial work, as shown by their visits to the classes and by their kind words of encouragement. We have had quite a number of valuable contributions of tools: From Mr. R. H. Brown a set of screw drivers, an extension bit, and a draw shave. From Felix Chillingworth a case of 13 augur bits, and from Wm. Norman a set of 8 chisels and a draw shave, for which we sincerely thank the donors."

PRINCIPAL FRENCH REPORTS RESULT IN SKINNER SCHOOL.

Mr. J. R. French, of the Skinner School, reports that:

"Mr. Loper has conducted the work with his usual skill and ingenuity, and there has been no diminution of interest. Pupils have been selected who seemed to have a taste for mechanical work, and in most instances they have shown an adaptation to it. Occasionally a boy has dropped out, who did his work so carelessly that the time seemed to be thrown away. The class that came from the Wooster School was the entire first class of No. 12, and their work averaged quite as well, if not better, than that of the selected boys. The purpose has been to produce useful articles, and most of them have met with ready sale. Many parents were anxious to own the objects made by their sons, and the sale of these has enabled us to obtain needed supplies without overdrawing the appropriation. All have been eager to work in the shop as much as possible, and during the intermissions and on holidays it has been a common thing to see some of them busy at the benches. Whenever there has been one session by reason of a storm, the boys have preferred to return, so as not to be retarded in their progress. Early in May Mr. Loper started a special class in wood carving. Beginning with blocks of plaster the boys were trained to facility with the tools and executed models with great accuracy. If the work is continued for another year, I shall expect to see them handling carvers' tools with real skill, and proficient in executing upon wood what they have designed upon paper. A few lessons were also given in clay modeling, enough to show the possibilities in that direction.

"HOW SOME BOYS HAVE PROFITED BY THIS INSTRUCTION.

"I have taken some pains to ascertain whether any substantial benefit has accrued to the boys who have received the training. One parent told me that he dated the first real start of his son, in any thorough work, to the impulse he obtained in the shop. He now has a shop of his own, in which he spends the hours he can spare from his High School studies. During the last season he has designed carefully a very beautiful canoe, made all his calculations on the strength of the materials and the pressure on every part of the boat, and put the whole thing together in the most workmanlike manner. His brother has also developed real skill, and has made during the winter many of the model joints for the use of the classes. Another boy has, by degrees, saved money to secure tools, and build a bench, and now makes in his leisure hours many articles of convenience for his home, and is sometimes employed in this way by his neighbors. One of our last year's graduates works in a pattern-maker's shop, another is an engineer, and many of them are engaged in some mechanical pursuits, and are *more valuable for the impulse obtained in the shop.*"

A donation of a full set of 24 planes was made by H. P. Hubbard, Esq., which will be of great service to future classes. The following is a list of articles made in the Skinner School shop during the year, most of which have been sold, and the proceeds applied to the purchase of new lumber. The estimated value of these articles is $87.23. 40 knife-scouring boards, 39 foot-stools, 26 library steps, 1 book-case, 12 corner brackets, 16 easels for charts, 6 moulding tables for sand, 2 table tops, 3 sets mathematical blocks, 24 boxes, 38 picture frames, 7 looking glass frames, 35 tube holders for laboratory.

HOW PRIVATE BENEVOLENCE COÖPERATES WITH PUBLIC EDUCATIONAL ENTERPRISE.

Mrs. William W. Boardman, of this city, has recently shown her interest in manual training, and her desire to have its benefits extended in connection with the public schools, by a gift in trust of $10,000, the annual income of which is to be applied by the Board of Education for this purpose. The deed of trust stipulates that the amount thus donated shall be known as the Boardman Fund, which can be increased at any time by gifts from other persons. Messrs. Prof. Henry W. Farnam, C. S. Morehouse, Esq., and Henry B. Sargent, Esq., are appointed trustees of the fund. They and their successors are instructed to see that all moneys derived from it are expended in accordance with the terms of the trust. Mrs. Boardman gave an additional sum of $500 to be expended the coming year in anticipation of the interest. This generous act is warmly appreciated, not only by the Board of Education, but by all who desire to see the scope of public education enlarged, so as to make the rudiments of an industrial education available for every child. The gift of Mrs. Boardman is also significant of a growing interest and belief in hand training as a legitimate part of common school education.

A CENTRAL INDUSTRIAL SCHOOL DESIRABLE FOR GRADUATES OF THE GRAMMAR SCHOOLS.

It is to be profoundly hoped that other philanthropic people of means will follow the example so wisely set, and furnish means to establish a central industrial school or department where boys, after leaving the grammar schools, can gain the elements, at least, of an industrial education. No particular trades should be taught, but the principles lying at the foundation of many of them. Such a school should teach drawing and designing, the use of tools applied to wood and metals and the various processes employed in handling them, the principles involved in machinery and practice in the construction of simple machines. The course of study should also include a more practical knowledge of physics and chemistry than is now given. An institution would thus grow up well adapted to the needs of a large manufacturing city, where the majority of boys pass from school to engage in some mechanical pursuit. The lessons of great industrial prosperity taught us by the large towns of France and England which have established such schools are most convincing evidence of their utility in providing a supply of intelligent skilled labor. Is there not some injustice done to the boy of mechanical aptitude, if at the close of his grammar school course he must either consider his education closed or else spend four years in the almost purely intellectual training of the High School? Four or eight years more of brain work furnished by the High School and College may be well enough for the boy who has a learned profession in view, but for one who desires to be useful through skill of hand and eye, even the Scientific School furnishes a training by far too theoretical and abstract. Has public education in New Haven not reached a point when something definite should be done to foster mechanical skill and so open the way for young men to fit themselves to be something else than book-keepers, salesmen or clerks? I would respectfully recommend that the Board take the matter under consideration and investigate, as far as may be, the needs of the industrial portion of the community and see what modification of, or addition to, the present system is desirable. For the present, I would recommend the continuance of hand work in the two school shops now organized and the opening of a third room in some central locality, to which classes from several schools can go if thought desirable. Or, if a plain building could be erected on some one of the lots now owned by the district, with a room large enough to accommodate twenty or twenty-five boys, provision could easily be made for *all* the boys of the first-class in each grammar school. Were this done it would be better, in view of the poor accommodations at the Dwight and Skinner Schools, to use their shops only for the boys of these schools, and to have boys from all other schools go to the central shop. A competent man should be employed to give his entire time to the work of supervision and instruction. If classes were taught from 10 to 12 a. m. and from 2 to 4 p. m. daily 200 boys could be accommodated weekly. This is substantially the plan now pursued in Boston and in Montclair, N. J. Enough has already been done to prove the feasibility and value of this training. The two exhibitions of industrial work given at the Dwight and Skinner Schools last spring called forth, for their more practical features, certainly, universal expressions of approval. It is evident that public sentiment is fully awake to the wisdom shown in carrying on these experiments.

Such a school as is here suggested by Superintendent Dutton as desirable was established by the City Council of Baltimore, Maryland, by the passage of an ordinance dated October 20, 1883, directing the City Commissioners of Public Schools to provide such a Manual Training School. This experiment of this special kind of "High School" has proved a marked success.

SUPERINTENDENT DUTTON URGES THAT TEACHING OF SEWING BE GIVEN IN ALL GIRLS' SCHOOLS.

I cannot leave this subject without urging that steps be taken soon to teach plain sewing to girls in the lower grammar grades. New Haven is one of the few cities in New England that have not already taken this step. Sewing is a staple industry of which a large majority of girls are said to be ignorant. If in grades IV, V, and VI one hour per week were devoted to this branch, I believe a great good would be accomplished at small expense. One teacher, at a salary of $500 per annum, could give the necessary oversight. As it is customary to have each girl, as a rule, furnish her own materials, but little extra expense need be incurred. A half day spent in the schools of Springfield last spring for the purpose of investigating the method of teaching sewing pursued there, did much to remove all doubt as to the propriety of making it a part of the curriculum. The pleasure and zeal with which the girls, both rich and poor, seemed to take up the work, as well as its good effect upon the school generally, furnished sufficient grounds for urging its adoption in New Haven. I am also led to believe that the introduction of sewing, under the limitations suggested above, would be approved by a majority of the tax-payers of the city.

The note from Principal Camp dated January 1887, and the extracts from Superintendent Dutton's report for 1885–6 given in chapter XIII of this volume; bring down the history of the movement in New Haven, to the present time. It will be there seen that the Superintendent's urgent advocacy for the teaching of sewing to the girls has, at last, been effective, and that the development of Industrial Education in the schools, since the announcement of the contemplated experiments to be undertaken by Messrs. Camp and French, made in the Report for 1882–3, has been rapid and continuous.

VI.

INDUSTRIAL EDUCATION IN THE CITY OF PHILADELPHIA.

EXTRACTS FROM THE ANNUAL REPORTS OF THE SCHOOL AUTHORITIES OF THE CITY OF PHILADELPHIA, PENNSYLVANIA.

INTRODUCTION.

The latest information accessible at the time (Reports for 1884 and 1885) concerning the Industrial Education movement in the City of Philadelphia, is given in this volume. (See ante, page 165, *et seq.*) Reference is there made to the early history given in Part I of this Report, in which the account was brought down to the official reports of 1880; the further statement is made that similar extracts from the intervening reports will be given in the present Appendix, and they are accordingly here inserted. The reports for the year 1886 having just come to hand, December 22, 1887, too late for insertion in the body of the book; extracts will also be given from these. The reports of the Philadelphia Board of Education are made for the calendar year, and, therefore, are not received at this office before the following December. In many other places similar reports are made for the school year, that is, from July to July, instead of from January to January.

Such continuous and copious extracts from the Philadelphia reports are here given because, in connection with those previously given in Part I, they illustrate the progress of such an educational movement from the time of its first lodgment in the minds of advanced educators to its gradual dissemination through the community and its final materialization in the new school buildings, apparatus and instructors, which are essential to, and mark, its adoption as an integral part of the recognized school system of the community.

These successive steps are clearly shown in these educational histories of this city without reference to the anterior movements, which resulted in the establishment of City "Night Schools," and of the "Artisan's School,"—the City school authorities in due course having thus taken upon themselves this work of supplementing the day schools which, before this, had been done by the Franklin Institute; the genesis of this latest educational advance may be succinctly stated as follows:

First, may be reckoned the movement for the introduction of the Walter Smith system of industrial art drawing in the public schools, begun by a few public spirited citizens just before, and immediately subsequent to, the Centennial Exposition; and early entertained by President Steel. The contemporaneous movement for the founding of the "Pennsylvania Museum and School of Industrial Art," although wholly independent, was doubtless of material service in arousing public interest in all that related to industrial art training; there had, also, long existed in the incorporated School of Design for Women and in the drawing classes of the Franklin Institute, a movement for technical training in Industrial Art; so that public opinion in Philadelphia had, in various ways, become familiarized with the general idea of technical training in Art, and in Art as applied to Industries; but, latterly, not with any idea of introducing such training in the public schools; though, as is shown in the historical chapter in Part I of this Report (see page 13, *et seq.*), such an effort was definitely begun by Rembrandt Peale as long ago as 1840. It would be an interesting study to trace the possible influence, exerted by that far-off and apparently unsuccessful effort, in preparing the public mind for the successful execution of the present movement.

Second, almost simultaneously with this movement for the putting of industrial drawing in the public schools, a single private citizen, Mr. Charles Godfrey Leland, began an experiment in the "Hand work" training of children, which attracted the attention of the school authorities, who, finally, permitted public school children to attend his classes; resulting subsequently in the adopting of the "Industrial Art School," as one of the city schools; this school is under the direction of the instructor who was Mr. Leland's chief assistant in carrying on his experimental classes.

Third, the change in the government of the city school system and in the organization of the officials, which resulted from the creation of the new office of School Superintendent, and the calling of Hon. James Mac Alister, who had won merited distinction as Superintendent of the Schools of the City of Milwaukee, Wisconsin, to take the same position in Philadelphia.

Superintendent Mac Alister had been one of the earliest and most successful promoters of the introduction, in public schools, of Industrial Art Drawing; and was recognized as an advanced leader in the new movement for Industrial Education. The calling of Superintendent Mac Alister to Philadelphia, thus brought strong and efficient support to President Steel, and to the Board of Education, in any designs for the practical introduction in the schools of elementary industrial training, which they may have entertained, and must be counted as constituting a very potent factor in the results already obtained.

Fourth, the putting of sewing in the Girls' Normal School, accomplished through the hearty coöperation of Principal George W. Fetter, which was followed by the subsequent putting of sewing in the Girls' Grammar Schools,—and later, by the agitation of the project of introducing cooking classes.

Fifth, the recent opening of the City Manual Training School, with its commodious building and its complete plant of machinery, as well as the adoption by the City, of the Industrial Art School. These form a record of practical results embodied in the schools of the second city in population, and one of the largest industrial cities of the United States, as they exist in the year 1886; and the growth of opinions which preceded such important movements is clearly traceable in the extracts here collated from the annual official reports; from which, if they so desire, others may learn how such educational revolutions are to be accomplished.

The report for 1881* contains the following statement by President Steel:

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* "Sixty-third Annual Report of the Board of Public Education, First School District of Pennsylvania, comprising the City of Philadelphia. For the year ending December 31, 1881, with their Accounts. Philadelphia: E. C. Markley & Son, Printers, No. 422 Library Street. 1882."

INDUSTRIAL EDUCATION.

In addition to the introduction of sewing as a part of the instruction of the Normal School, the Board has also assisted an effort made by Mr. Charles G. Leland to demonstrate the feasibility of making industrial education part of the training of the public schools.

Mr. Leland was among the first who realized the necessity of combining manual with mental instruction.

From the consideration which this subject has received, and what has already been accomplished, it has now come to be generally conceded among enlightened people everywhere, that manual training must be a part of any system of education which can claim to serve its true purpose, to develop the faculties fully and equally.

The perplexing problem, even with those earnestly convinced of its necessity, is to determine how such instruction can be conducted. It is admitted that the needed general instruction of this kind cannot embrace the special arts of the trades, but must be of a preparatory or rudimentary character, such as training the eye and the hand, and including design and the principles of construction.

Mr. Leland, after careful and extended study of foreign schools of this class, has returned to the City with entire faith in a plan of industrial education which his experience and observation convince him is capable of being taught in connection with general education.

The Board, in extending its aid to enable this experiment to be made, has rendered a service properly due from the educational department of a great manufacturing City.

The introduction into our schools of studies usually associated, and the preparation of teachers therefor, has required a great amount of time, and we cannot expect to determine upon a new department, such as this must necessarily be, without long and patient labor.

Mr. Leland has been the director and teacher in this work; the labor has devolved upon him. Among the first to comprehend its importance, he has been the first to disregard the claims of his own affairs, and to devote his talents and means to the establishment of a system of industrial education.

The progress of this work has been steady and most promising. Mr. Leland's report, which is appended,* furnishes valuable information, which will awaken and sustain a deep interest in the work.

In this connection, and as a fundamental part of industrial education, it is proper to state here that marked progress is being made in the teaching of drawing. The work of the schools in this valuable study is of a highly creditable character.

The teachers availed themselves of the recent opportunity that was afforded them to learn the system of drawing as applied to design and the industries in a spirit that only a conscientious interest in their work could inspire.

The success which has attended this instruction has been remarkable. A large number of teachers made themselves familiar with the system; and drawings which they prepared for graduation and certificates, were so well executed, that they have received the highest approval from those familiar with this class of work throughout the schools of the country, and have served to enhance the high estimate of the ability and attainments of our teachers. The action of the teachers in this matter, and its results, are so honorable to the school department, that the Board should express its approbation by the best means in its power."

* * * * * * *

EDWARD T. STEEL, *President*.

The following statements in reference to sewing in the Normal School, and to Kindergartens, are from the report for the year 1881, of Principal George W. Fetter, of the Normal School.

SEWING IN THE PHILADELPHIA NORMAL SCHOOL.

The Department of Sewing is comparatively new, but time enough has elapsed for numerous questions to arise as to the management of large classes in industrial occupations, which as yet are unanswered. Are sewing materials to be furnished to the pupils the same as books and stationery? Large quantities of goods suitable for clothing will be needed. How shall they be obtained, and what disposition shall be made of the completed work? It is proposed to teach "mending," and the questions which demand practical answers in this line of work are too obvious to need statement.

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*This report, by Mr. Leland, is not given in the 63d annual report of the Board from which this is taken.—I. E. C.

The willingness with which the pupils commenced their work in this department was very satisfactory, and their rapid improvement has surpassed the most sanguine expectations. Thus far good results have been produced, while the change from mental to physical exertion affords a healthful recreation, without retarding the progress or diminishing the necessary amount of work. Sewing tends to a personal improvement whose influence is felt directly in the home circle. Educating both the hand and the eye to precision and neatness, pupils insensibly learn to understand and appreciate its importance. In the lives of many the power of the needle must necessarily bear equality with the pencil and the pen. Surely nothing adds more to domestic comfort, and is more essential in many home circles, than this despised, neglected, and almost lost art of hand sewing.

SEWING SHOULD BE PUT IN ALL GRADES OF GIRLS' SCHOOLS.

If it were introduced into all the lower grades of the public schools it would enhance the comfort and prosperity of many homes. The instruction given at school would supplement the home training of the thrifty and supply a great want for the children of the ignorant and improvident. Our employment offices are besieged by needy women unable to sew or perform any skilled labor, and who are constantly compelled to accept any employment, however menial. The parish sewing school shows great need of instruction in this art in almost every grade of society.

KINDERGARTENS.

The following question is frequently asked: Why not establish a Kindergarten in connection with the Normal School? Usually the advocates of this system will listen to no arguments against its general introduction.

No one will deny that the great principle underlying Frœbel's method is evolved out of a profound knowledge of child life. It recognizes the existence of three distinct natures united in one organism, demanding separate and different modes of training, yet reciprocally acting and reacting on each other. It takes cognizance of the complex structure of this three fold nature, and endeavors to adapt its methods to these varied wants. By songs, games, and other ingenious devices, designed with special reference to some purpose, it seeks to promote a healthy, happy growth of the whole being. No faculty of mind, body, or soul is favored at the expense of another. It aids physical development by creating a healthy activity; it promotes moral improvement by cultivating the choicest social qualities, while it favors intellectual growth by presenting knowledge in its most attractive form. The system claims, as one of its chief benefits, physical training. That it trains the eye to see, the ear to hear, and the hands to handle; that the outcome of this education is power of observation, ingenuity in invention, and skill in execution. So much on behalf of the system.

OBSTACLES TO THEIR INTRODUCTION IN PUBLIC SCHOOL SYSTEMS.

Many insuperable obstacles to its introduction into our public schools interpose. First, the expense. Frœbel's method contemplates the training of the child from the earliest age possible. "It is from three years and upwards," says the "Kindergarten Guide," "that the Kindergarten becomes the desideratum, if not a necessity," Thus it adds to the school population the children between the ages of three and six. A second item of expense is the small number of pupils that can be allotted to a teacher. In St. Louis, where the system has been incorporated in the public school system, the maximum of scholars to a teacher is twelve, making a half day's instruction to each of twenty-four children. Yet even for this small number the work is far too exhaustive for the teacher. How many additional teachers will be required to assign one to every class of twenty-four children of the population from three to six. Nor are these the only sources of increased expense. The system requires expensive apparatus and great increase of room. "Two rooms are indispensable," says the same work, "and, if possible, there should be three." New buildings would be needed, and the seating capacity must be more than doubled. The average cost of instruction of the primary grade is not more than nine dollars per capita. The cost is reduced to this low figure by the large number taught by one teacher at a very meagre salary. In this respect the public Kindergarten enjoys no advantage over the private one. Large numbers are fatal to the system. The cost per pupil in private schools ranges from fifty to seventy-five dollars per annum, The "Kindergarten Guide" says, "It should be understood from the first that Kindergarten education is not cheap."

A grave doubt exists in the minds of our most experienced educators, whether a system exactly designed to meet the wants of the stolid and phlegmatic Germans, is not a positive injury when applied to the excitable, mercurial temperament of American children. Where there is a large pauper element, deprived by grinding poverty of all home training, home culture, and home comforts, the Kindergarten is a positive blessing. But it is doubtful whether Frœbel himself ever intended that mothers should delegate to strangers the blessed privilege and solemn duty of training their infant children. There is a question which may well give us pause. What will be the effect on American home life if children are withdrawn from the family to find their highest pleasures in the school-room? Will not the family tie, already weak from the continued strain and tension of our modern civilization, be altogether destroyed?

Time and space will permit but an allusion to the crude and erroneous impressions resulting from the attempt to teach science to babies. The loss of novelty, when the proper age arrives for teaching these things, is another evil which will be fully understood by every practical teacher. And last, but not least, the self-conceit fostered, and the false estimate formed, of the little smattering of knowledge, are serious barriers to the formation of habits of continued and thorough application.

The reports of the next year (1882) contained in the 64th Annual Report of the Board of Education, have nothing relating to our topics, except the following paragraph in the report by Mr. Fetter, the principal of the Girls' Normal School.

SEWING.

* * * The Department of Sewing is in a prosperous condition, and there is daily evidence that the pupils appreciate the importance of this study. An unusual interest has been manifested in its operations by parents and visitors generally, and its utility as an industrial pursuit has never been questioned. From indications, the close of the present year will produce the most satisfactory results, and prove the great necessity of such work in the school. It is ultimately intended that those who receive certificates will be qualified not only to sew, but also to teach sewing.

In the following expressions by President Steel, in the 65th report, for the year 1883, it is evident that he thinks the time has nearly come for the establishment of a City Manual Training School. He says:

"INDUSTRIAL EDUCATION.

I take pleasure in calling your attention more specifically than before to the subject of manual instruction in connection with the sciences which apply to it. The interest with which this subject is regarded by members of this Board may be said to be fully shared by the community, and it cannot be doubted that the time has come for this Board to take the initiative step, which must be made by it, and submit to Councils a plan and estimate of cost for such a school as the City of Philadelphia should possess. Scientific and practical manual instruction, which has taken a deep hold upon every enlightened nation, and which may be said as yet is scarcely begun, is destined to mark one of the great epochs in human progress. While we can understand what aid this instruction will be to our youth under the changed conditions of the trades; how it will promote skilled labor, more in demand to-day than ever before, though this is the greatest age of machinery the world has reached (these and many other considerations of equal weight and force are sufficient to prove its necessity); yet manual and mental co-education, which is destined to become the system of general education of the future, has a far deeper root and foundation than the incidental conditions of the trades. It is nothing less than the adjustment of instruction to the enlightened purposes of life, as understood at the present day.

TENDENCY OF EDUCATION TO BECOME MORE PRACTICAL.

The world for three hundred years has been progressing from what may be called a sentimental and abstract system and purpose of learning to a practical and concrete one. At one time learning was thought to be dishonored by any application to material affairs; only now they have come to be regarded as its highest office and best use. It has long been conceded to what are known as the professions. In the department of science, practical education has recently, so to speak, rendered great service, and it now, in the progress of events, is about to attain its greatest usefulness in embracing industrial education; in teaching the most valuable head and the most useful hand, so that they may be a united power; the head that directs the hand which has fashioned most that honors the human race. If you can conceive of this hand having a thoroughly scientific as well as practical knowledge of its work, you will conceive of a higher civilization towards which we are progressing; and industrial education is the high road to it. It means the education of the people by the practical common-sense method of the people, in place of a system largely inherited from the Greek philosophers and the school men of the Middle Ages, which is entirely unsuited to the purpose of general education at the present day.

The treatment of the mental faculties separately, strengthening and disciplining them in an abstract way, doubtless has its merits, but the minds which find the best results from such training must be the exception, and the field of usefulness to which these minds are intended to be devoted must be equally exceptional.

Mental and manual co-education is the immediate application of mental instruction to its practical use, so that the instruction shall be real, not only understood, but also its use, or one of its uses. It is not too much to say that no instruction is understood or valued until it is applied by the learner. It is every one's experience that what made his studies stupid and irksome was the absence at the time of a clear comprehension of their application and use.

The world has come to regard usefulness and industry with the highest respect and honor, and to measure character by them. Our system of general education must be adapted to this enlightenment; this is a change in the estimate of human excellence from that which prevailed when our abstract system of education was first practiced.

The complaints of our system of education, which are becoming more and more pronounced, have their justification in the fact that its underlying principle of abstract teaching was devised for the preparation of philosophers and metaphysicians.

Now that the world has come to see that wealth, honor, and happiness come from an industrious life, and that those industries which stand first in their practical usefulness are of the highest merit, our system of education must be made to lead to and aid these.

It does not follow that we should discontinue what are known as the higher branches of learning; and it would be a fatal mistake to do so. Many of these are applicable and of the highest use in the mechanic arts, and they will never have such justification in our system as when thus applied; and such branches as are literary and mental may well be continued when the others have become of daily use to the hands. Our system of education will in this way prepare the many for the work the age demands of them, and the few will have at least as good a preparation as at present for the special callings they have in view. To give a scientific knowledge of the laws and principles which enter into the mechanic arts, and to teach this by theory and practice, is what industrial education proposes. What different subjects to the student, Chemistry, Physics, Geometry, Mechanical and Engineering Drawing, would be if applied daily in the work-room while being taught in the class-room.

A CITY MANUAL TRAINING SCHOOL DESIRABLE.

A school with all the equipment necessary to this instruction is one of the greatest needs of the city. During the year, the City Councils transferred to this department for school purposes a large lot of ground in the Twenty-ninth ward, which would be suitable in size and location for a High School and adjoining buildings adapted for work-rooms. This school should be capable of accommodating two thousand students. The work-rooms should be ample and provided with machinery for the manipulation of metal, wood, and textile fabrics. All the sciences that apply to the manipulation of these materials into articles of use in our daily life should be taught in connection with their immediate practical application, from the generation of steam to the mixing of dyes. Such a school would be an inestimable blessing to the youth of the city, and would eventually pay ten-fold its cost in its influence upon our vast local industries. The city cannot afford to neglect or postpone provision for a school of this character. This feature of protection to American industry is quite as important as any that has received legislative consideration. Our Government, conducted as it is by the people, *would* be expected to lead in that which so eminently concerns the interests of the whole community, yet in this particular we are sadly behind. It probably would not be possible to find a city in Europe with half the industries of Philadelphia without one or more such schools.

I commend this matter to the Board as one of first importance to the city, and trust it may receive early consideration. The public must depend upon this department for the suggestion and plan for such a school, and there is little doubt the proposition will receive cordial support from the people.

The next publication, for the year 1883, extending however in this instance to June 1884, was a notable one, being the first Annual Report of the newly appointed Superintendent of Public Schools* (see reference on page 166 of this volume), Hon. James MacAlister, formerly Superintendent of the school of Milwaukee, Wisconsin. The introduction and such portions of his report as relate to the revision of studies requisite to make an opening for the proposed new studies, and, also, the very able paper contributed to this discussion at the Saratoga meeting of the "American Institute of Instruction" the year before, are here given.

REPORT OF THE SUPERINTENDENT OF PUBLIC SCHOOLS.

To the Board of Public Education, First School District of Pennsylvania:

GENTLEMEN:—It is not without a full consciousness of the responsibilities involved in the act, that I submit this, my first Annual Report, and the first Annual Report ever made to your honorable body by the Superintendent of the Public Schools of Philadelphia.

The latter fact invests the performance of the duty with an importance that would not otherwise belong to it, and impresses strongly upon my mind the peculiar difficulties with which it is necessarily attended.

In commencing the work of supervision in a city like Philadelphia at so late a day, there were many obstacles to be overcome, and it is not easy to make a statement of the labors which have been performed or the results which have been obtained. Ten months is but a short time in which to organize an undertaking so extensive in scope and so difficult of execution. No allusion need be made to the hindrances growing out of our complicated system of school administration. Under the most favorable conditions, the establishment of supervision in a school system of such proportions as ours, after so many years of waiting, was a task of no small magnitude; and it will require more time than the supervison has yet had, to give a conclusive reason for its existence and to produce the fruits which the Board and the public have a right to expect. Besides, it should never be forgotten that the best work of the educator cannot be stated in figures. Real culture of mind and character cannot be estimated in percentages. The positive and valuable outcome of one school, or of many schools organized into a system, must be sought elsewhere than in the statistics which are so often put forward as the evidence of success.

DUTIES DEMANDING IMMEDIATE ATTENTION LEFT NO TIME FOR ELABORATE STATEMENTS OF STATISTICS.

These general remarks will, it is hoped, help to explain whatever short-comings may be discovered in this Report. My duties have been so numerous and my responsibilities so onerous, that but little time has been left for making an elaborate statement concerning the public school system of the city. Work of a more practical and pressing character was demanded. My anxiety has been to get the supervision established as an active agent in the work of public education. The time for discussing what can and ought to be done by supervision had passed, and my sole object has been to make it felt in the schools in every possible way, within the limits of its powers and duties as defined by the Board of Education.

But aside from the fact that the active duties of the position have occupied so much of my time, it has not seemed to me advisable to go into the discussion of questions of a general or abstract character in this Report. That there are many defects in our school system, no one, I think, will deny. There need be no hesitation in making this admission. The most unfortunate frame of mind for both teacher and school officer is a feeling of self-satisfaction with what has been done, and a fixed resolve to let things remain as they are. In no sphere of human activity is a sincere desire for the highest and best more imperative than in the school-room. Here, of all places, is a spirit of hospitality to new ideas, essential to sound and successful work. The Board seemed to be agreed upon some definite lines of reform with reference to the schools. As I understood the situation, what was wanted was not more discussion as to the necessity of these reforms, but an effort to put into operation such changes as would lead to better results in the public education of the city. I have chosen, therefore, to take certain evils as admitted, and to ask the sanction of the Board for authority to apply without delay what appeared to be the proper remedy for their removal. For these reasons it is my purpose in this Report to confine myself to a succinct statement of what has actually been accomplished by the supervision during the past year, and to such recommendations as seem to me of great urgency at this time. There are many questions of general interest in connection with public education, the presentation of which would no doubt prove interesting to the Board; but these can very well be laid aside till matters of more immediate importance have been disposed of.

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* "First Annual Report of the Superintendent of Public Schools of the City of Philadelphia for 1883. Printed by order of the Board. Philadelphia: Burk & McFetridge, Printers, 306 and 308 Chestnut Street. 1884. Pp. 115."

DIFFICULTIES SURROUNDING THE INTRODUCTION OF SUPERVISION.

Perhaps an allusion to the difficulties under which the work of supervision was begun may be pardoned at this point. The fact that it took more than a decade to secure such action in the Board of Education as warranted the appointment of a superintendent, is sufficient of itself to indicate the general sentiment which prevailed concerning the establishment of the office. The public mind was divided on the question, and the final action of the Board, although unanimous, was only secured by the willingness of some of the most earnest members to make a trial of supervision rather than from any strong conviction as to its necessity; while the feeling of the great mass of the teachers was one of distrust and fear as to its effect upon themselves. It is needless to say that these were obstacles of the most trying character to the occupant of the position, but it is most gratifying to be able to state that not only has no opposition come from these sources, but from nearly every quarter have proceeded the kindest and most generous offers of assistance. It seems proper that some acknowledgment of this fact should be made here, and I may be allowed to say that the change alike in the views of the Board as a whole, and in public opinion, has not been without its helpful influence in carrying forward the work. The different attitude which a large majority of the teachers have assumed has been especially grateful and encouraging. They have come to look upon the functions of supervision from a very different standpoint from that occupied a year ago; and it affords me much pleasure to be able to say that my labor is made lighter every day by their conscientious desire for improvement and progress, and the cordial co-operation they are ever ready to give in promoting the best interests of the schools.

ON REVISION OF STUDIES IN THE "SECONDARY" (INTERMEDIATE) SCHOOLS OF PHILADELPHIA BY THE SUPERINTENDENT DURING THE FIRST YEAR OF HIS ADMINISTRATION.

In revising the geography, a very large reduction in the amount of details to be taught has been made. In the entire range of the common school curriculum, no branch is generally more barren of results than geography; and yet no study is better calculated to engage the attention and interest of pupils. Its influence in cultivating a love for knowledge is so obvious that it needs no remark; and yet it is not uncommon to find a strong dislike for the study in the schools. This condition of things is largely traceable to the mistake of undertaking too much in the early grades of the study, added to the want of good methods of teaching. A mass of disconnected facts is poured into the child's mind, which are entirely beyond his power of assimilation. No distinction is made between the essential portions of the study and the numerous unimportant particulars which are mingled with them. So, again, the mode of instruction very generally appeals to the memory, and a branch of study which, more than any other, refers to the world of things environing man, is taught almost exclusively from books, with an occasional reference to a wall map. It appears to me that so long as courses of study set forth such an array of details for pupils to memorize, there can be no remedy for the short comings of pupils in this branch, of which complaint is so often made. I have endeavored, therefore, to draw up a course of instructions for children *beginning* the study of geography. A careful selection of topics has been made, and while these have been systematically developed, they have been so generalized as to make a firm and enduring frame-work for the details to be filled in when the pupils have reached the higher grades. The immediate needs of secondary pupils have also been provided for, by introducing into the Eighth grade an outline of our own State, sufficient to give pupils who do not go farther, a serviceable knowledge of the general features of that portion of the earth's surface in which they are most interested, and which it is important that they should know most about. Objective methods of instruction have been largely made use of; and such natural phenomena as can be brought within the experience of the pupils—the molding board, map drawing, the wall maps, and the globe, are made the basis of all the instruction. * * * . The geography has become so encumbered with minute details which it was never intended should be taught, that much of the pupil's force is expended in committing to memory names and descriptions which stand for little or nothing to his intelligence, The object-lessons have become a mass of words entirely disconnected from the things which they represent, and the instruction consists largely in requiring the pupils to write out descriptions of things and processes which have been dictated by the teacher, many of which they have never seen, and are not likely to meet with in their daily experience. * * * .

RAPID EXTENSION OF INTEREST IN INDUSTRIAL EDUCATION.

In no question pertaining to public education has there been such a rapid advance of opinion within the last few years as in that of industrial education. Five years ago it was almost impossible to obtain a hearing on the subject before any educational body; but scarcely a meeting is held now in which it does not hold a prominent place on the programme. The progress made in the practical application of the problem to the schools has hardly kept pace with this growth of sentiment; but the success which has attended the movement in this direction has been most satisfactory.

The interest of the American people in manual training as an element of general education was, strange to say, first aroused by the exhibit of school-work made by the Russian Government at the Centennial Exhibition in 1876. The Massachusetts School of Technology impressed by the educational value of this exhibit, took immediate steps for organizing a department similar in its general plan and objects to the Russian institution. The result was the School of Mechanic Arts, which was started in the fall of the same year, and at once began to exert a powerful influence upon the whole country. St. Louis followed with its admirable Training School in 1879. Chicago dedicated a school on the same plan last year. The College of the City of New York has been modifying its course of instruction so as to bring it more into harmony with the practical needs of the time, and has added manual training to the regular work of the school. In Boston, classes for manual training on a limited scale have been in operation in connection with the Grammar Schools since the beginning of the present year, and the School Committee of that city are now considering the propriety of greatly extending the work. The little city of Toledo has also its manual training school. Our neighbor, Baltimore, has just made a beginning with an industrial school which gives every promise of success. In our own city, the trustees of Girard College, moved at last to put the wish of its far-seeing founder into execution,* are erecting a large and finely-appointed building for the manual training of the boys; and the Spring Garden Institute, with an enterprise that cannot be too highly commended, has been carrying on day and night classes in hand-work for three or four years, and has thereby done much to foster public sentiment on the subject in our midst.

Some remarks on the abstract question as to the value and necessity of making industrial training a part of our general education will be found below; but the above statement of facts has been presented as the most direct means of calling the attention of the Board to the matter. I need only add that there is no longer any serious difference of opinion among the leading educators of the country as to the principles upon which manual education should be conducted. It is now very generally conceded that the training of the mental faculties will be most effective when all the senses are most fully brought into play as factors in the general process; that hand instruction, no matter of what kind, if adapted to the age of the pupil and properly conducted, can be made disciplinary and a valuable adjunct to the primary literary studies; and that a proper amount of hand study can be introduced in our public schools without impairing the educational value of the studies now taught.*

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* The will of Stephen Girard contains the following remarkable provision: "I would have them (the scholars) taught facts and things, rather than words and signs." These words show that Girard must have been thoroughly penetrated with the new educational ideas which Pestalozzi was spreading abroad, while the Philadelphia merchant was amassing the great fortune that was to be devoted to founding the noble institution that bears his name.

INTRODUCTION OF MANUAL TRAINING IN THE PUBLIC SCHOOLS OF PHILADELPHIA URGED.

Without further argument, therefore, I beg to recommend that immediate steps be taken by the Board, to introduce manual training into the public schools of this city. It is needless to go into details here as to the manner in which the instruction should be carried on. These can all be much better attended to, when the work of organization is practically taken up. It is not necessary to wait till a large appropriation can be secured, and the work inaugurated upon an extensive scale. It will be safer in every way to begin in a modest way. If a convenient school building not needed for ordinary purposes can be secured, a moderate amount of money would equip it with the appliances needed for the first year's work of the curriculum, and but few teachers would be required. The admission to the school should be based upon a thorough examination in the common branches of study. One or two hundred pupils would be enough to make a start. A year's trial would, I am sure, demonstrate the value of the instruction, and the practicability of organizing it as a part of the general educational system of the city. Councils will not need then to be importuned for funds to extend the scheme; but backed by public opinion, which is fully ripe upon the subject, will be willing and ready to promote an interest with such numerous and vital relations to the well-being of the community.

Having disposed of the subject in its practical bearings, it seems proper that something should be said of the problem of industrial education in its scholastic and social relations. In spite of the fact that a very general agreement has been reached on the main issue, there are still some questions concerning which the discussion is not wholly closed. The general grounds, also, upon which the claim for manual training rests cannot be too often repeated. I subjoin, therefore, the more important portions of some remarks made by me, in opening a discussion on Industrial Education, at the annual meeting of the American Institute of Instruction, held at Saratoga, a year ago. With this material at hand, it seemed hardly worth while to attempt a new statement of the points which are there considered.

MANUAL TRAINING IN ITS SCHOLASTIC AND SOCIAL RELATIONS.

THE OPENING PAPER OF THE DISCUSSION ON INDUSTRIAL EDUCATION; READ, BY SUPERINTENDENT JAMES MAC ALISTER, BEFORE THE AMERICAN INSTITUTE OF INSTRUCTION, SARATOGA, NEW YORK, 1883.

There has been very little change in the ideas which have controlled our methods of education, and these ideas were formed something like four hundred years ago. Like nearly all the great intellectual agencies of modern civilization, the established system of education dates from the Renaissance, and the direction given to the schools at that time has been followed with but slight modification ever since. It is unnecessary to point out to this audience what were the characteristics of that important epoch, but I may be allowed to remind you that its most distinctive feature was the return to the culture of the classical nations of antiquity. In discussing the question now before us, we should not forget that it was the extinction of Greek thought and Roman law that brought upon Europe those dreadful centuries of darkness, when all the progress the world had made in knowledge and refinement seemed about to disappear forever. For seven or eight hundred years the splendid achievements of the two nations, which have done more to fashion the mind and character of the civilized world than all other influences put together, were lost and forgotten. The literature, art, and philosophy of Greece ceased to form a part of the consciousness of men. It was the restoration of this classic culture, and the new birth of the human mind which resulted therefrom, that lifted man once more into a realization of his inherent worth and dignity; that recreated within him a sense of his true place in nature, and opened his soul to its elevating influences; that brought forth all that wealth of power and beauty which has been growing and spreading throughout the world ever since.

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*These propositions are stated substantially in the language used by Professor Runkle in a report made to the American Institute of Instruction, at the annual meeting in 1883.

THE BEGINNING OF THE RENAISSANCE.

It is necessary to bear these things in mind to understand the methods which found their way into the schools that took their rise at this time. When the men of Western Europe began to read Homer and Plato and Sophocles and Thucydides once more; when they began to know Virgil as something different from a wizard, to feel the growing style of Cicero, to study Roman life in Horace, to read Roman history in Livy and Tacitus, they were so fascinated with the works of these great writers that they cared for nothing else. The humanists, with their glorious enthusiasm for the classic authors, were the natural outcome of the revival of learning. It was inevitable that they should set an incalculable value upon the literary productions of Greece and Rome. The exhaustless wealth of thought, the exquisite beauty of style, which they contain are still a marvel to us. How overpowering, then, must have been their effect upon the ardent spirits to whom they were first opened!

It was in the midst of this intellectual ferment that the modern school was born; and you know what was the result. The study of the classical languages was made the almost exclusive occupation of the schools. In this particular all the schools were alike, the schools which were founded by the reformers, as well as the schools of the church in whose bosom the Renaissance had been nursed. The Protestants could have got no hold on education if they had not followed the Catholics in drawing up the curriculum of their schools. Melancthon was a humanist, and when John Sturm, the leading Protestant pedagogue, came to put the new ideas into form, he founded a system which was purely humanistic. The model which Sturm set up was adopted everywhere. John Colet established the English schools upon the same plan. The education planted in the American colonies differed in no particular from that of the mother country. The pattern which Sturm furnished has undergone but little change down to the present generation; and in spite of the reforms that have recently been introduced, it is in the main the standard applied in estimating the character of all our higher education, and still controls, to no inconsiderable extent, the instruction provided in the schools of lower rank.

These general remarks upon the rise of the humanistic education, have been offered because a proper understanding of the influences which operated in shaping its origin serve, I think, to account for the hold which it still retains, and the difficulty experienced in getting a fair hearing for the claims of industrial education.

THE MOVEMENT FOR INDUSTRIAL EDUCATION IS BUT AN OUTCOME OF THE RENAISSANCE.

I wanted also, if possible, to offer some reason for asking the more strenuous advocates of industrial education to be a little more liberal in dealing with the defenders of the classical system. It is not to be inferred, however, from what has been said, that the movement in favor of making industrial training a part of education has sprung up like a mushroom. Its germs were planted long ago in fruitful soil. The Renaissance means more than the restoration of the Old-World culture. It means also the discovery of nature, from the knowledge and enjoyment of which man had for centuries been almost entirely shut out. And so Bacon, with his new philosophy, came out of the Renaissance by a process of orderly development to teach the true method of investigating the laws of the natural world. The Baconian philosophy led to the study of things in opposition to the humanistic study of words, and the issue then joined has been maintained ever since. Out of the inductive method of obtaining knowledge grew Locke's philosophy of mind, and Locke's doctrines made possible a true science of education. He first of all treated the human mind as a natural thing,—showed the mind's relation to the external world, and first of all, as I take it, insisted that man was to be educated by contact with things. The reasoning of the English philosopher was applied to the training of the young by two men widely different in character, but both of whom have exerted an extraordinary influence upon the progress of education,—Rousseau, the French sentimentalist, and Pestalozzi, the Swiss schoolmaster and real founder of all that is best in the primary school work of the present day. The Kindergarten of Froebel was the natural product of Pestalozzi's teachings; and Froebel has formulated a system in which the earliest education of the child is based exclusively upon nature, and all learning grows out of doing.

We see, therefore, that while the humanistic system of education has been the controlling influence in the schools of Europe and America ever since the modern era of culture began, there has been silently growing up a counter theory, which has now become too strong to be put aside by a wave of the schoolmaster's hand; and it is here to-day, demanding in no uncertain voice the recognition of its rights.

WHAT ARE THE PRESENT NEEDS TO WHICH EDUCATION MUST BE ADAPTED?

We are, therefore, brought face to face with the question as to what education means. That is really the problem that is before us for discussion. I have the temerity to believe that there is no occasion for any wide divergence of opinion on the subject. If the question could only be properly stated, we should not fall out greatly in arriving at a conclusion. If we were debating what is ideally the best form of education, there would not, I am sure, be the slightest difference of opinion in this gathering, or in any meeting of educators. I take it for granted that all are agreed that the ideal of education is the harmonious development of all the powers and faculties of man's nature. But we are not discussing what form of education is best in the abstract, but what system is needed under the existing conditions of society—what kind of schooling is best adapted to minister to the well-being of the individual and the prosperity of the community of which he forms a part.

Now it seems to me that we cannot avoid the conclusion that the productive employments are more and more monopolizing the activities of the great mass of men. If this be so, the problem which educators are called upon to solve is, whether we are to continue methods of training in our schools which originated when society was very differently constituted from what it is at present, or whether the time has not come when these methods should be so modified as to fit men and women for the circumstances under which they are to live in the world. We have only to look at the facts of history with an unprejudiced mind to discover that, in spite of all our theorizing on the subject, this has practically been the course followed by all the nations which have pretended to do anything for the education of their citizens.

GREEK TRAINING WAS FITTED TO THE NEEDS OF THE GREEKS.

Some rather disparaging words concerning Plato and Aristotle have been spoken in this discussion. It is a mistake, I think, to blame these great thinkers for the ideas of education which they held. They elaborated the Greek system of education, which consisted of music and gymastics—terms which, I need not say, had a wider signification to them than what they bear now. This kind of training was well and good in its place; it produced a type of manhood which, in some respects, has never been equalled. The Athenians who gathered in the Pnyx to listen to Demosthenes were as splendid examples of enlightened freemen as the world has ever seen. But I think the point was well taken that the views of these two great masters of Greek philosophy should not be allowed to dominate the schools of to-day. There is a vast difference between the Athens of Pericles with its "sweet reasonableness," and the structure of civilized society in our own time. The education of the present must be shaped to suit the needs of the industrial masses if it is to fulfil its proper function in the State. We must not close our eyes to the fact that by far the larger number of men in every civilized community are workers, to whom a skilled hand is quite as important as a well-filled head. Is it not within the strictest bounds of justice and right to ask that the schools should undertake to do something for the practical necessities of these millions of men and women? I repeat, that so far as public education is concerned, it is the interests of the many, and not of the privileged few, that must be provided for.

WHAT ARE THE PRESENT NEEDS OF AMERICANS?

Take the public schools of almost any city. The first year of the primary school course will be found to contain nearly one-third of the total enrolment; in some instances it is much larger. In the last year of the grammar school the enrolment does not generally exceed from two to five per cent. of the total. The high school usually has an attendance about equal to that of the highest grammar grade.

How is this marked difference in the attendance of the pupils to be accounted for? What has become of the children? The answer is very simple. Before the middle grades have been finished the greater number of these young people have been taken from school and put to work. The school door has closed upon them forever, and they must find their way through the world with such scanty intellectual equipment as has been crowded into five or six years of their childhood. With such facts as these staring us in the face, is it not a duty to pause and inquire whether the character of the education given to these masses of children is just what it ought to be; whether it would not be possible, by adapting it more fully to their actual necessities, to give them a better start in life? It is useless to talk about compelling a longer attendance at school, unless some compensations of a practical kind are offered. Doubtless many of these children are the victims of parental cupidity, of the efforts of manufacturers to cheapen commercial products by the employment of juvenile labor; but in the larger number of cases their withdrawal from school is a dire necessity. But we cannot stop to inquire into these causes. Our immediate duty is to remodel our elementary courses of instruction in such a way as shall make them tell more directly upon the interests of those for whose benefit they are intended.

VALUE OF GREEK CULTURE TO MODERN LIFE.

It must be clearly apparent to any one who takes an impartial view of these things that it is not so much a question as to whether the old ideas of education are of any value, as whether they are sufficient for the present age. Nothing which I have said should be construed into a disposition to make war upon classical culture. I believe the world could not live without it, I believe that the poet of the "Iliad" and the "Odyssey," the philosopher of the Academy, the historian of the Peloponnesian War, are just as important to us to-day as the scientific discoveries of Watt, Faraday, and Morse. I do not see why there should be any difficulty between the classicists and the scientists, why there should be any antagonism between the literary school and the industrial school, The glorious culture of the ancient world, with all the precious fruit it has borne in the modern world, must be kept alive if nobility and beauty and refinement of mind and character are to be cherished as things worth thriving for. I came across a remark in an eloquent writer the other day, in which it is claimed that "except the blind forces of nature, there is nothing moves in the world that is not Greek in its origin." This is a very strong statement, but I feel that it is hardly possible to exaggerate our indebtedness to the people which made Athens the one city that can never perish from the memory of men. It will not do for those who are battling so courageously for the rights of science to forget that its mighty achievements would soon fade away, that the very classes for whose interests they are so unselfishly laboring would soon lose that sense of human worth and dignity which is the best safeguard of their rights, if the culture which has been the inspiration of so much lofty thought and noble action were to be obliterated from the consciousness of the race.

THOROUGH TRAINING IN ENGLISH PREFERABLE TO INSUFFICIENT TRAINING IN THE CLASSICS.

It seems to me then, that the real question with which we have to deal is, what is it best to do for this great mass of young people who leave the schools long before there is any opportunity for benefiting by this higher culture? I am speaking, you will perceive, of primary education ;—but the question just put will apply, to a very considerable extent, to the secondary schools as well. There is no doubt a large amount of waste arising from the persistence with which the old humanistic model is still followed in our high schools and academies. But the classicists will not listen to any suggestion of change in this respect. It was only this morning that a friend said to me in talking over this matter, "Taking your own estimate of the value and importance of classical culture, why not put as much of it into the schooling of any child as you can get? Cut off one-quarter of it,—if you like, one-half of it: the boys and girls will be better off with what is left than they possibly can be with any other form of education." I do not believe it. When the late distinguished Senator from Wisconsin, Mr. Carpenter, came to Boston to study law, he went to Rufus Choate and asked his advice about devoting himself to the study of the classical languages as a means of cultivating his literary taste and power of speech. The great lawyer inquired what length of time his young friend could afford to spend upon Greek. Carpenter's reply was that he did not know, but that he hoped to be admitted to the bar within two or three years. Mr. Choate said, "Unless you can afford to give ten years of hard work to the classics, you had better not attempt them at all; your three years' labor will be lost time. You had better devote these three years to the study of Shakespeare, and Milton, and the English Bible; these writers will give you the culture you covet much better than the smattering of Greek or Latin you can hope to acquire in so short a period of time." How well Mr. Carpenter profited by this advice must be known to every one who has ever had the privilege of listening to his rich and powerful eloquence. I mention this incident because it gives the deliberate opinion of a man who was an enthusiastic Greek scholar as well as a learned lawyer; a lawyer who, after hard day's work in the court-room, was in the habit of burning the midnight lamp that he might nourish his indomitable spirit on the resounding Phillippics of the Athenian orator and the "moving accidents" of the "tale of Troy divine."

THE TIME HAS COME FOR A NEW DEPARTURE IN PRIMARY SCHOOLING.

I am fully persuaded, therefore, that some radical changes will have to be made in the character of our public education. I must repeat again that these changes do not mean the extinction of the classical system. The demand is simply that the primary schools shall be made to conform to the existing necessities of the people, and that side by side with the higher institutions of learning there shall be established schools where the sciences, in their relation to the arts and industries, shall be made specific branches of instruction and training.

Let me say here, by way of anticipating any attack which may be made upon this position, that I do not mean that a less amount of education should be given in these schools than is provided under the present system. All that is required is that it shall be different in kind, and that the practical purpose to which the school is to be put shall be kept steadily in mind. I cannot stop now to notice the objection often made to the use of the term education in connection with any kind of training other than that of the mind. I must protest, however, against the assumption that the craftsman is a mere machine, and that there is no intellectual advantage to be had from manual training. Was there no mind in that wealth of beauty which the workman lavished upon the commonest articles of daily use in the Italy of the sixteenth century? Was there no culture in that happy period for the worker when Labor was still the companion of Art? I must confess to an inability to understand the opposition which so many people keep up to any attempt to extend the limits of the school beyond what in stereotyped phrase are called the "common-school branches." Take drawing, for instance, a study only secondary in importance to the traditional "three R's:" it has been a hard fight to win even the partial recognition accorded to it in a few cities of the United States.

It is an egregious mistake to suppose that those who favor manual training wish it to take the place of mental training, or are seeking to deprive any class of pupils of the portion of intellectual culture they now receive. But I would like to know why the hand should not be trained as well as the head? The perfectly educated man is he whose facile hand follows obediently the clear and ready promptings of a well-developed brain. The hand is the most marvellous instrument in the world; it is the necessary complement of the mind in dealing with matter in all its varied forms. It is the hand that "rounded Peter's dome;" it is the hand that carved those statues in marble and bronze, that painted those pictures in palace and church which we travel into distant lands to admire; it is the hand that builds the ships which sail the sea, laden with the commerce of the world; it is the hand that constructs the machinery which moves the busy industries of this age of steam; it is the hand that enables the mind to realize in a thousand ways its highest imaginings, its profoundest reasonings, and its most practical inventions. Why, then, this disparagement of the hand in the schools? Why should not an organ which forms so vital a part of man's being receive a due share of attention in preparing him for the duties and responsibilities of citizenship? There can be no question about the harm that is done to society by this neglect. The trouble with so many departments of industry at the present moment is, that there are too few skilled artisans to put into form the ideas of the designers,—that labor and thought are too far apart from each other. One reason why there is so much unrest among the working classes is, that our public education does not give them all the help they need to enable them to pursue their work successfully and happily.

THE KINDERGARTEN IS THE TRUE BEGINNING OF THE NEW METHODS.

It is a great deal easier, however, to state the desirability of these reforms than to tell how they are to be accomplished. It will do no good to say that there are no difficulties in the way; but if the teachers could only be brought to believe in the necessity of manual training, and would set themselves resolutely to work to make it a part of the public-school system, it would be a comparatively easy matter to invent the methods and appliances for putting it into practical operation. Much has already been done abroad, and a hopeful beginning has been made in a few places in our own country. There need be no fear, I think, about the primary schools. No better start can be made than by placing the Kindergarten at the basis of the school system; if that can only be effected, all the rest will follow as a matter of course. There surely can not be any dissent from the proposition that a larger amount of scientific knowledge should be given in the elementary schools. I do not mean that kind of science instruction which looks so well in a programme of study, but when you get inside the school-room, resolves itself into cramming the pupils with facts and figures from a book or the dictation of the teacher. I have known an elaborate scheme of oral instruction in physiology and physics laid down in a course of study of which the class-teacher into whose hands it was put knew but little more than the pupils, and for whose use not so much apparatus had been provided as she could put into the crown of her bonnet. But in such cases our criticism should not be so much against the well-meaning instructor as the school authorities, who think to quiet their own conscience and appease the public demands by making a show of providing knowledge for the children. The desideratum here is an outline of the fundamental principles of natural science prepared by a master mind (it takes a Huxley to write a primer of biology) thoroughly acquainted with the conditions of our primary education,—such an outline as can be taught by any regular teacher imbued with correct ideas of scientific method. The school-room should be supplied with an assortment of the simplest possible appliances for the illustration of the lesson; the "nickel-plated apparatus" is an abomination. Such a plan would require neither profound learning on the part of the instructor, nor a large outlay of money to carry it out. If the normal and high schools did their work properly, the teacher would be ready for her duties, and school-boards would find it a matter of economy to substitute the few simple articles required for the expensive and useless trash that is found in so many school-rooms.

In this way, it appears to me, a substantial foundation in the general principles of the sciences which stand most nearly related to the industrial occupations might be laid; and if the Kindergarten idea of learning by doing were carried up into the primary school, and systematic exercises in manipulating clay, wood, and iron were also added to the existing curriculum, all that the friends of manual training have any right to demand would be secured without causing any terrible revolution of the existing system. No doubt some elimination of the multiplicity of the useless detail in the courses of study would have to be made, but that would be a blessing which should be welcomed at any price. Trouble would be more apt to arise when we got to the secondary* schools. This is the ground on which the battle between the classicists and the scientists, the idealists and the realists, will have to be fought out.

AN INDUSTRIAL HIGH SCHOOL TO BE ADDED TO THE PRESENT HIGH SCHOOLS.

I am so anxious not to be misunderstood on this point, that, at the risk of tedious iteration, I want to say that, to my mind, the proposal to carry manual training into this stage of the course of study does not mean any injury to the high school. I have great faith in the high school. I hold that any system of education which does not include the high school is defective in a vital part of its organization, and cannot meet the claims which the public—the poorest man's son as well as the richest—has a right to make upon it. But I am quite as strenuous in believing that great injustice is being done to the public, in refusing to add to the secondary school such instruction as shall make it adequate to provide for other necessities which are equally, if not still more urgent. I cannot avoid the conviction that very large numbers of young persons are really debarred from obtaining any benefit from the secondary schools because of the limitations imposed upon their curricula.

PRESENT HIGH SCHOOLS FAIL TO MEET NEEDS OF A LARGE PROPORTION OF PUPILS.

The high school of almost any city will furnish an example. Out of the classes which enter only about fifteen or twenty per cent. finish the course. Nearly one-half the class leaves at the end of the first year. We shall not have to go far to find an explanation for these facts. The parents soon discover that the education which their children are getting is not going to be of much practical account to them in the business of life, and so the pupils are withdrawn and placed at work. It must not be forgotten that by far the larger proportion of these young people are intended for industrial pursuits. The professions get but few of them. It is facts of this kind, aside from any theoretical views I may entertain on the subject, that have brought me to the conclusion that secondary schools, as now organized, do not come up to the public demands. I have an impression that such changes in them could be effected as would render the figures just given impossible. I am not prepared to say how these modifications should be made; whether the manual training school should be made a separate institution, or the entire secondary system of instruction should be so changed that both kinds of training, the classical and the industrial, could be carried on in parallel lines in the same school.

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*It is hardly necessary to state that the term "secondary" is not used here in the local sense applied to it in Philadelphia, but with the signification usually attached to it throughout this country and in England.

MANUAL TRAINING HIGH SCHOOLS WILL MEET THE NEEDS OF SUCH PUPILS.

It is understood, of course, by every one that literary instruction is an essential part of the manual training school. All that is meant by such a school is the addition of a sufficient amount of work in the handling of tools and the manipulation of materials, to a good, sound education in language, mathematics, history, science, and drawing. I do not see that the language study need necessarily be confined to English. German or French might be added, with profit to the pupils. But while speaking in this qualified manner of the *modus operandi* of manual training as a part of secondary education, I have not the slightest doubt of its practicability. The success of the St. Louis School has settled this question as to the existence of a public demand for education of this kind, and we may safely trust to the future for the reconcilement of its claims with those of the old system.

WHAT MANUAL TRAINING HIGH SCHOOLS SHOULD DO.

A word or two must be added concerning the proper sphere of the manual training school. It does not mean the fitting of pupils for special industrial occupations. Boston, Philadelphia, New York may find it to their advantage to establish schools for the training of artisans, just as they have schools for the training of engineers and lawyers and doctors; but the moment the manual training-school undertakes to do this, it will forfeit its place as a part of the general educational system. The establishment of trades-schools is a different question altogether. Manual training, as I understand it, aims at general results. Its purpose is, to develop human beings on the executive side of their nature as well as the receptive. Its aim is to equip a boy so that when he gets into the world he will be able to *do* as well as to *think*. The training is to be so generalized in character that it will prove an accomplishment which will stand its possessor in good stead wherever manual skill can be made available. Cannot this be done? A few days ago I listened to a lecture in which it was contended that this general training in handcraft is impossible. It was said, for example, that there are a great many different kinds of hammering in the various trades, and that a boy could not learn hammering in such a generalized form as would be helpful to him in taking up some one of these special kinds. This statement will seem rather discouraging when I tell you that it was made by a professor in an industrial university. He ought to know more about such a matter than a layman like myself; but, with all due respect for his knowledge and position, I beg to differ from him. Common sense teaches that a boy who has learned the nature and use of the simple tools, not as implements in specific trades, but as instruments for shaping the staple materials of industrial processes, will possess a power of adaptation in many directions of work, and will be able to enter very considerably in advance upon any industrial occupation to which he may turn his attention. Now that the apprenticeship system seems to be falling into decay, the latter consideration is one deserving the serious thought of those who are interested in economic problems.

You will have noticed that in what I have said of manual training, reference has chiefly been made to its industrial relations. This course has been pursued, not because I think it does not produce valuable results in the culture of a human being, considered as consisting of body as well as spirit, but because I am persuaded it must be honestly followed up on this line by those who are in earnest in dealing with the question at all. We cannot get away from the fact that, at the present time, industrialism monopolizes the lives of by far the larger number of men in every civilized community. It is an imperative duty, therefore, to make the public education conform to this fact. The conviction grows upon me every day that this momentous question must be squarely met by the educators of this country, and that it will have to be settled in the interest of the millions of men and women whose happiness should be a paramount consideration in our social arrangements. The intelligence of the masses is the absolute condition of our political security, and the more completely we can make the schools minister to their practical needs, the more certain will be the assurance of peace and prosperity for the whole people.

After quoting the paper just given, the Superintendent proceeds with his report as follows:

SEWING.

While considering the question of manual training in the public schools, the claims of the girls should not be overlooked. The practical reasons for such training may not be the same as in the case of boys, but the arguments for its educational value apply equally well. This matter has been receiving a good deal of attention in Europe of late, and school authorities are beginning to give it serious consideration in our own country. Even, however, where the advantages of such an addition to the education of girls are conceded, much diversity of opinion exists as to the form it should assume. It would be premature, I think, to attempt an answer which would cover the whole ground occupied by this question. Problems as to woman's individual and social activities, the limitations of sex in relation to education and work, and the economies of labor, remain to be solved, before any conclusive statement can be made concerning the obligations resting upon the school in which girls are prepared for the duties of life. There is one form of handwork, however, about which there need be no difference of opinion. I allude, of course, to sewing,—that art which has been practiced by woman in all ages and countries, and skill in which is so essential to the proper discharge of her duties in almost every relation she sustains to the household. Here, it seems to me, there can be no question as to the duties of school boards in large cities. The objection will be ready, doubtless, that the teaching of sewing does not belong to the school, and that it is unwise to assume an obligation which can be better performed without its aid. But we must look at the matter as it actually stands. The fact is notorious that in every large center of population, there are thousands of homes in which there is neither time nor opportunity for giving girls this training; and any teacher can testify how lamentably deficient her girls are in the use of the needle. Sewing was formerly taught in all girls' schools. It has been crowded out by the tendency of current educational methods, to place undue emphasis upon certain kinds of school-work which monopolize the mental energies of children, without affording appreciable results. We must never forget that school training should have regard for use as well as for discipline; and it would not be difficult to show that sewing would help to prepare girls for complete living much better than many things on which a good deal of time is now wasted.

INTRODUCTION OF SEWING IN GIRLS' SCHOOLS RECOMMENDED.

These are some of the reasons which have induced me to lay this matter before the Board; and I would earnestly recommend that steps be taken to provide for the girls attending the schools, such training in this useful art as is consistent with the general purposes of public education and due attention to their other studies. I believe that instruction in sewing would prove useful in two ways: first, in providing a means of manual training for girls, that could not fail to supply a want long felt in the schools; and, second, by providing an opportunity for acquiring an accomplishment of advantage to every woman in the practical duties of life.

Fortunately, we are not without some degree of experience in this branch of instruction in our own city, which is of value in this connection. It took a good deal of earnest effort to get sewing introduced into the Girls' Normal School, and it was feared by many that it might interfere with what was regarded as the more important work of the pupils. We have learned, however, that no step ever taken in connection with the school has yielded more satisfactory results. The scholarship has not suffered; the sewing exercise affords an agreeable relief to the other duties of the girls, and a graduate now leaves the school, skilled in the use of the needle to an extent that must add to the sum of her happiness in whatever position of life she may afterwards be placed.

SUCCESS OF SEWING IN BOSTON SCHOOLS.

But the teaching of sewing is not to be regarded as a mere experiment. Boston furnishes an example where it is carried on upon a large scale. Sewing has long formed a regular part of the instruction in the public schools of that city, and a report made to the School Committee upon the subject contains important testimony as to the value of the study. The report says: "Some of the schools where sewing was formerly held in most contempt are to-day justly proud of the amount, variety, and excellence of the work they accomplish;" and in another place; "Not unfrequently young girls fresh from school find steady remunerative employment, thanks to their skill with the needle; others are now able to keep their own garments and those of younger sisters and brothers neat and tidy; and many graduates of our schools in more favored positions admit that they owe their skill in fine needlework entirely to the teaching received at school." Evidence equally valuable might be furnished from other sources; but enough has been said, I think, to prove that an addition can be made to the curriculum of the girls' schools which would serve to offset, to some extent, the manual training recommended for the boys. * * *

RECOMMENDATIONS.

* * * . 6. That steps be taken without unnecessary delay for the introduction of industrial training for both sexes, into the Public Schools, in such form as shall secure to the pupils a more symmetrical development of all the powers of mind and body, and a better preparation for the active duties of life. * * * .

JAMES MAC ALISTER,
Superintendent Public Schools.

SEPTEMBER, 1884.

Subsequent to the putting in type of the early chapters of this volume, in which (see, in chapter XIV. pages 165–180, inclusive) extracts from the two annual reports of President Steel—those for 1884 and for 1885,—are given, the report for 1886 has been received, and such portions of the President's report as relate to Industrial Education, with the report of the Committee on Industrial Art Education, and of the principal of the Industrial Art School, here follow. By the insertion of these extracts from this latest report, this volume includes the whole history of this industrial movement in Philadelphia, from 1880 to 1886; while an account of the earlier phases of the movement is given in Part I.

No further official report by the authorities of that city will appear before December, 1888. In this volume (Part II.) of this Report, the plan followed in Part I. has been adhered to,—namely: to insert, so far as possible, the latest information that may come to hand as the work is passing through the press, hoping thereby to compensate for the unavoidable delays in publication, by the inclusion of the account of contemporaneous movements down to the last moment possible.

The President's preliminary summary of progress is a very important one, since it shows the most gratifying results of the efforts towards the more general introduction in the schools of various forms of industrial training, which have been effected since, and doubtless largely in consequence of, the change of management initiated by the installation of Mr. Mac Alister, as Superintendent of City Public Schools; an office before unknown to Philadelphia. This view of the work accomplished by four years of persistent effort is most gratifying. The experiments so ardently urged by the advocates of Manual Training are, at last, to be thoroughly tested throughout the schools of the second most populous city of the Union and under the personal direction and supervision of one of the most earnest, intelligent and experienced advocates of the new methods; while the extracts which have been given in the two volumes of this Report from the series of the annual reports of the Board of Education, are a sufficient guarantee that Superintendent Mac Alister can count upon the cordial coöperation of President Steel, and his colleagues of the Board of Public Education.

The experiment on a large scale is now to be tried under the most favorable circumstances. While Metropolitan New York is just timidly venturing upon a partial trial of the new methods, ready to withdraw at a moment's notice, this sister city, almost her equal in population, and popularly believed to be largely her superior in the extent and variety of her industries and manufactures, adopts almost the entire programme of the educational reformers; from public Kindergartens to the public Manual Training School. Sewing has also been successfully put in all the Normal, Grammar and Secondary Schools for girls, and the only step not yet taken is the introduction of cooking schools; which, since the marked success of those established in Boston by Mrs. Hemenway, must, it would seem, soon follow.

The words of President Steel in regard to the use of machinery in Manual Training Schools would seem to require elucidation. How wood working or iron working can be undertaken to any extent in the absence of all machinery, other than hand- tools, it is not easy to imagine; for the simplest lathe is "a machine," and, while I believe the way to the restoration and re-creation of *artistic* artificers, is by hand training and hand work, in contra distinction to machinists and machine work; it is difficult, in these days of ever developing machinery, to imagine how the elements of industries are to be taught to boys without giving them a knowledge of the "machines;" that is, of the "tools" they are to use. If this argument, used by President Steel, is to be vigorously enforced; it would seem to undermine the very foundation arguments of the advocates for the elementary industrial training of public school children. This argument being based on the present decadence of apprenticeship and consequent want of opportunity for the boy to learn any trade, therefore, he is to be taught in school, the elements of all trades. How much good will it do the 19th Century boy to give him only a mastery of the tools used in the trades of the Middle Ages, while leaving him in absolute ignorance of the use of the tools which are almost exclusively used in the industries and trades of his own time? The "Manual Training Schools" proper, are guilty of no such anachronisms. In the private institutions of Boston, St. Louis, Chicago, and in the first public-school Manual Training School, ever established in this country, the one in Baltimore, the management of the steam engine, and the use both of wood working machinery and of iron working machinery, are systematically taught.

"Industrial Art Training" and "Training in Mechanical Industries" are two very different kinds of education, with two very different purposes. It was "Industrial *Art* Training" which Walter Smith advocated and taught, and it is this which President Steel seems to have in mind when he protests against introducing "Machinery into a Manual Training School" urging that it would be like teaching the trade of making "chromos in an Academy of Fine Arts."

Now right here it is pertinent to point out that President Steel is most logical in his conclusion if he starts from the premises laid down by Walter Smith; or from those on which Mr. Leland based *his* experiments. To produce art workers, to introduce art knowledge and art training in the public schools, was the well defined purpose and object of Superintendent Philbrick, Charles C. Perkins, and Professor Walter Smith, and nothing was further from their plan than the present phase of the movement which latter, although the germ of the present development was contained in it, has been diverted almost entirely from the artistic motive, which was its inspiration and main purpose, into the mechanical industrial motives. It has been lowered, materialized, changed from art to mechanism, by the very people who claim to be disciples of Walter Smith, but who got from him only the lesson that you could give definite instruction in manipulation to large classes of children at once.

It was owing to the far reaching influence of that demonstration, under the inspiration and guidance of Walter Smith and his supporters, that the present movement for industrial education was possible; for a knowledge of drawing is equally as essential to the industrial, as to the artistic phase of the movement.

The mercantile, mechanical spirit has almost wholly overpowered and superseded the ideal, artistic endeavor to raise up in these United States a generation of art loving children, capable of art expression. With the death of the three great men who initiated this artistic educational movement, the ideal they cherished seems to have vanished. The movement has extended, but is more and more an industrial, and less and less, an *artistic*, movement. It is so strong that, although all the sympathies of the author of this Report are with the artistic idealists who were making their ideal practical, this second part of this Report has been largely changed to admit the account of the changed movement.

It is "Industrial Education," no longer "Industrial Art Education," that educators now propose and emphasize;—"construction," the "making of things," is now the shibboleth of the reformers, and in no way is the discrepancy between the two schools more clearly made apparent than by this protest uttered by President Steel against the introduction of machinery in Manual Training Schools!

The materialistic advocates of Manual Training Schools, stipulate for machinery; while President Steel, who has accepted in good faith the arguments of Walter Smith and the idealistic advocates of Industrial Art, protests against its introduction.

It is this continual shifting of purposes and of arguments by the educational reformers, which barbs the brilliant shafts of satire hurled among them by Superintendent Marble!

There are these two distinct experiments, both, I believe, practicable, both desirable, both having some things in common,—but each having a definite individual purpose; so that, when they are referred to indiscriminately by different debaters,—either intentionally or unconsciously—it is no wonder that confusion ensues.

Under cover of the prestige of Walter Smith's fame and name, this later educational movement has been so diverted from the original purpose, that the materialistic, constructive, carpenter and blacksmith-shop feature, which with him was only a subordinate feature of the plan, has been made to appear as its only essential purpose.

This purpose is of value, and, as it is readily understood, appealing as it does directly to utility, is the more easily popularized. It is, by all means, worth doing, but it is *not* what the introducers of Industrial art drawing were working for, in their days of arduous toil. It in no respects meets the needs they sought to meet; nor is it a worthy substitute for that which they sought. The leaders in the movement for general training in "Industrial Art" sought to develop and train the ideal nature of the child, to awaken imagination, to cultivate taste, to make the average American apprehensive of beauty, appreciative of Art. It was in these directions that Americans were deficient; not in mechanical dexterity!

But it is not proposed to enter upon this discussion, at this time, further than to point out the grounds of President Steel's protest, and to call attention to the fact that, in making use of the term "Manual Training School," he was using it in a different sense from that of most of the other authorities quoted in this volume.

From the latest Annual Report * by the educational authorities of the City of Philadelphia, Pennsylvania, the following extracts are taken.

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* "Sixty-eighth Annual Report of the Board of Public Education first school district of Pennsylvania, comprising the City of Philadelphia. For the year ending December 31, 1886, with their Accounts. Philadelphia: Burk & McFetridge, Printers, 306-308 Chestnut Street. 1887. Pp. 412."

PRESIDENT'S REPORT.

To the Board of Public Education.

GENTLEMEN: In presenting my Annual Report for the year 1886, so many evidences of permanent improvement and growth press upon me from all sides that it seems proper to begin with words of hearty congratulation. The careful work of this Board for the past ten years is gradually maturing into form, and beginning to prove of great benefit to the community. The results obtained are the best compensation for the careful study which the Board has given to the subject of school management and the plodding labor which it has expended in the improvement of the public school system. To the community it must be a source of great satisfaction that a department of the City Government, which is second to none in importance and on which so large a sum of mony is expended, should receive so much care and attention from those who are entrusted with its administration. It is an admitted fact, I believe, that this Board has, in recent years, adopted many radical measures which have had a marked influence upon the general character of the schools, and have placed them fully abreast with the most improved methods of instruction, management, and administration. All good school work, however, is progressive; and the work which has been accomplished can only be expected to yield its best fruits, from year to year, when the various changes that have been made have been thoroughly incorporated into the system, and the moral influences resulting therefrom have had sufficient opportunity to exert their full effect.

GENERAL SUMMARY OF PROGRESS MADE.

The full scope and purposes of the changes to which reference has been made will be best indicated by the following summary:—

The compensation of teachers was so modified as to lessen the distinction formerly existing among the assistants, caused by the wide differences in their salaries. The tendency has been towards an equalization of salary, and therefore in the direction of equal rank and honor. The plan of increasing the salary upon the basis of the term of service has become thoroughly established, and has yielded many excellent results.

The organization of the schools was modified by the introduction of Supervising Principals. Under the old system, the Principal was virtually a class-teacher, with little or no opportunity for directing the work of his or her school. Under the new plan, each school is supplied with a Principal, in fact as as well as in name, whose whole time is devoted to the management of the school. This system of management, adopted in 1878, is rapidly becoming general; and by the wise conditions established by the Board for its gradual introduction, the more able and experienced teachers are being placed in charge of the larger schools.

GENERAL INTRODUCTION OF SEWING IN THE CITY SCHOOLS FOR GIRLS.

The experiment in teaching sewing and cutting and fitting in the Normal School proved so thoroughly satisfactory, that two years ago instruction in sewing was made general in all the Secondary and Grammar Schools for girls. The results obtained have been of the most gratifying character, and it is believed that the work in this branch of instruction is more extensively and thoroughly orgnized in this City than in any other in the country. Twenty-five thousand girls are now regularly taught the principles and practice of sewing by a corps of thirty-two special teachers.

THE MANUAL TRAINING SCHOOL.

In September, 1885, a Manual Training School was established, and has deservedly attracted wide attention from all parts of the country. The system of training pursued in this school is believed to be unsurpassed, and its success is the most satisfactory demonstration of the fact that no difficulty need be experienced by any community in engrafting manual training upon its general educational system.

PUBLIC KINDERGARTENS ESTABLISHED.

Within a few months, the Kindergartens, previously managed by a body of citizens known as the Sub-Primary School Society, have passed from their direction to that of the Board of Public Education. The Kindergarten, therefore, is now a recognized part of the public education of Philadelphia; and while it is too early to draw any conclusions from this connection, there can be no doubt that these Sub-Primary Schools (by which name it seems to me they ought to be known) cannot fail to prove a great boon to the large numbers of young children whose opportunities for instruction are so limited.

NIGHT SCHOOLS.

During the past few years the Night Schools have greatly increased their usefulness as the result of wiser and more faithful management, and this has so commended them to City Councils that the appropriation of $10,000 for 1880 has steadily advanced to the sum of $35,000 for 1886.

COURSES OF INSTRUCTION REVISED.

The Course of Instruction in every department of the school system except the High and Normal Schools, has, during the past three years, undergone, a thorough revision, which has brought the schools into line with the most enlightened views of educators, and the most advanced methods of instruction pursued in the best schools of this country and Europe.

ADMIRABLE RESULT OF ESTABLISHING THE SUPERINTENDENCY.

The establishment of the Superintendency four years ago has proved of inestimable benefit in giving stability and unity to the entire department of education, which, from its divided management, greatly needed the sustaining influence of a professional head. The Superintendency also has been of great value in enabling the Board to organize and carry into effective operation the various changes which have been recited above.

This general summary presents a record of which, I think, any public body might well be proud. It shows a forward march in the work of public education, unequalled perhaps in the history of this country; and it is gratifying to be able to state that this progress has been of the most substantial character, and has been warmly sustained by the most intelligent sentiment of the community.

I pass now to the consideration of some features deserving of special notice.

INDUSTRIAL EDUCATION.

It is hardly necessary that I should say much to the Board as to the absolute necessity of industrial education to fairly develop the powers of a human being and fit him to fill his place worthily in the world. There is good reason, I think, for the objection so generally made to the instruction given in the public schools as tending to lead children away from the great industrial occupations which have so vital a relation to the well-being of society in our time.

The start the Board has made in this work by the establishment of a Manual Training School, is of the highest importance to the community. The organization, appointments, course of instruction, and training in this school, are of the most admirable character. There is but one caution which I desire to make in speaking of this school, and that is, that great care should be taken to guard against anything like special training. All the work of the school must be made to tend in the direction of the general development of the pupils, if it is to serve the ends for which it was instituted. There is a great obligation resting upon those who have led in this work, to see that no false step shall be taken by which this reformation in education may be retarded. It is the harmonious development of the whole being which the school is to accomplish. This must include the training of the hand; and through this instruction will be revealed the pleasure of producing something, and the skill that may be acquired in doing it. In this way will be inculcated habits of industry and love of work.

The enlightened observation of the times regards this instruction as due to every individual, just as centuries ago it became a conviction that every child had a right to mental training. Universal manual training is based upon the principle of general development, which has no necessary connection with special or technical education.

OPPOSED TO THE INTRODUCTION OF MACHINERY IN A MANUAL TRAINING SCHOOL.

It appears to me that the introduction of machinery as an adjunct in manual training would be a great error, and would evidence a confusion of the work of manual training with that of technical instruction. Machinery is a hand substitute —a labor-saving system; it belongs to the trades; is purely mechanical, and in its office dispenses with the skill of the hand. To introduce machinery in a Manual Training School would be like the introduction of the process of producing chromos in an Academy of Fine Arts; it would be to abandon the end in view, not to speak of adopting the wrong principle.

It is not worth while to speak of the space required for, or the expense of machinery, when we are declaring its use is opposed to the very principle of Manual Training.

It is reason for congratulation that this instruction can be best given by the simplest methods of the handicrafts.

These thoughts are presented here, because it seems to me a matter of the highest importance that no error should be committed during the experimental stage of the Manual Training School. I do not fear any serious difference of opinion on this subject, but have deemed it best to express clearly and explicitly my own views upon it.

THE EXHIBITION OF SEWING BY THE CITY PUPILS SHOWN IN NEW YORK.

While speaking of industrial education, I must refer to the Exhibit of Sewing made by the public schools of this city in the Exhibition held by the Industrial Educational Association at New York last spring. The whole scheme of instruction was admirably displayed by means of specimens arranged in frames; and a large collection of work done by the pupils in every department of plain sewing was got together, and so classified as to set forth the whole scope and outcome of the instruction in sewing given in our schools.

It attracted marked attention, and was generally conceded to be the most complete and satisfactory exhibition of the kind ever made in this country.

Special acknowledgment is due to the Superintendent of Schools for the creditable manner in which this branch of our School Work was represented in this Exhibition—the first of the kind, I believe, of any importance held in the United States.

KINDERGARTENS.

It will be impossible for me to speak at as much length as I should like of the action taken by the Board in incorporating the Kindergarten into the public school system of the city. The Board was led to take this step chiefly because it was discovered that the appropriation made by City Councils for a number of years to the Sub-Primary School Society was not strictly in accordance with law. Without the assistance derived from the city, it was impossible for that Society to go forward with the good work which it had been doing in carrying education to large numbers of little children who are entirely beyond the reach of the public school system. Councils showed their great interest in and approval of this work by expressing their willingness to appropriate money for the maintenance of the Kindergartens in connection with the public schools, and for this purpose voted the sum of fifteen thousand dollars last December. Arrangements were thereupon entered into between the Sub-Primary School Society and the Board of Education by which the Kindergartens under the care of the former were transferred to the latter. On January 1st this Board assumed the management of these Kindergartens, and since then a special Committee of the Board and the Superintendent of Schools have been diligently engaged in reorganizing the Kindergartens, and preparing such rules and regulations as were necessary to incorporate them thoroughly into the school system, and render them available to the class of children for whom they are intended.

The labors of this Committee have just been completed, and the Kindergartens have made a very satisfactory start. It is needless to point out the benefit which the establishment of these Kindergartens, or Sub-Primary Schools, will be to the masses of poor children in the city. They will add at least two years more to their opportunities for education, besides furnishing a kind of training which will serve to lay the foundation, not only for the instruction that is to come after, but for a better type of manhood and womanhood than would be possible under other circumstances. I commend the Kindergartens to the watchful care of the Board, and trust that, with the co-operation of Councils in furnishing larger means, they may be built up into one of the greatest and most useful features of our public education. * * *.

Respectfully submitted,

EDWARD T. STEEL,
President.

REPORT OF THE COMMITTEE ON INDUSTRIAL ART EDUCATION.

To the Board of Public Education of the First School District of Pennsylvania.

Gentlemen :—The Committee on Industrial Art Education beg leave to present the Annual Report of the Director of the Industrial Art School, at Fifteenth and Locust streets, and invite the special attention of the Board to it. It affords the Committee great pleasure to state that the School was never in as prosperous condition as now. Having been thoroughly equipped in all its departments, and important and highly commendable changes been made in its curriculum, its sphere of usefulness has been materially enlarged. Evidence of the estimation in which these changes are held, is shown in the large and remarkably regular attendance, the interest displayed by the pupils in the several branches taught, in their cheerful obedience to the rules of the School, in their observance of wholesome discipline, and in their consequent notable progress, as practically illustrated in the many specimens of their handiwork, which are always open to the inspection of visitors, and a number of which will, in a few days, be placed on exhibition in the rooms of the Board of Public Education.

In view of the important changes made in the system of Drawing in the Public Schools under the recently adopted Course of Instruction, and of the fact also, that a large majority of the pupils of the Industrial Art School are preparing themselves for the vocation of teaching, the Committee feel confident that the most beneficial results to the Public Schools generally, will certainly follow the instruction given them. The evident lack of ability on the part of many of the present corps of teachers in the Public Schools, in the matter of Drawing in accordance with the requirements of the "Revised Course of Study," furnishes a most conclusive argument why the "Industrial Art School" is entitled to, and should receive, all the encouragement needed to afford it the widest possible scope for the extension of its valuable system of instruction.

The School has already attracted the marked attention of educators, not only in nearly every section of our own country, but of foreign countries also; quite a number of teachers and others having visited it and been in attendance for the purpose of gaining, by personal observation and study, a practical knowledge of its methods of instruction.

The Committee would also state that all the scholarships in the "Woman's School of Design" and in the "School of the Pennsylvania Museum of Industrial Art," in the gift of the Board of Public Education, have been satisfactorily filled, with many applications on file for the fifteen places in the two institutions, shortly to be thrown open to competition.

In conclusion, the Committee would congratulate the Board and the friends of common school education generally, upon the marked advances which industrial education has made in public favor within a few years. Each passing day furnishes more and more convincing proof of its intrinsic value, and demonstrates beyond the peradventure of a doubt, that it is destined to become an integral part of common school education everywhere. In this great educational reform movement, Philadelphia is justly entitled to the honor of having been the pioneer; the "Industrial Art School" claiming the proud distinction of being first to adopt it.

Respectfully submitted,

A. M. Spangler,
Isaac A. Sheppard,
Saml. T. Child,
Anna Hallowell,
A. S. Jones."

Industrial Art School,
Fifteenth and Locust Streets.

To A. M. Spangler,
Chairman Committee.

I beg leave to present the following :—

Since my last report, very material changes and improvements have been made in the exercises of the school, and in the several rooms, all of which I am pleased to be able to state, have resulted advantageously to the instruction and comfort of the pupils and must ultimately add largely to the advantages hitherto enjoyed by them.

The system of rotating the classes from room to room, introduced last year, works admirably, the changes being made each month without any confusion. The pupils become especially interested when working in the various materials in the several departments, and undoubtedly acquire more skill by being employed alternately on opposed mediums. I consider this one of the most important improvements yet introduced in schools of this character.

The purchase of new materials, tools, plaster casts and furniture for the storeroom, has greatly increased our facilities, each pupil now having under the new arrangement a separate space for panels, apron, etc., the materials for each division being separated in locked closets.

THE VALUE OF PRACTICE IN FREE HAND DRAWING.

The elementary instruction in the several branches has been systematized and graded during the past season, our increased plant enabling us to give individual instruction to each pupil every session on the blackboard. Too much importance cannot be given to this work. No one pursuit will educate the hand quicker than firm free-hand drawing on a large scale on the blackboard. Every month the pupils are required to draw graded sets of elementary forms of the leading styles in ornament, free hand, the meaning of each being also clearly explained to the pupils.

Owing to additional facilities and a thoroughly enforced system of discipline carried out by the Superintendent, Mrs. M. C. Robins, I am now enabled to devote all my attention to the instruction of pupils and to personally examine and criticise every design and piece of work produced in the School, each design being marked by me before being considered finished.

In view of the facts that the Metal Class on Saturdays could only accommodate fifteen pupils, that it necessarily occupied the entire room usually devoted to wood-work on other days—the plant being wholly inefficient—and, that the facilities for instruction were limited, owing to lack of appropriation for expenses as recommended in my last report, the metal working has been abolished until more extensive quarters can be had. This allows the Saturday class of pupils, children and teachers, to rotate monthly into the wood-working room instead of drawing and modelling only.

I still feel it necessary to urge the use of metal-work, however, as part of the course, for the advancement of general hand culture.

The falling off in attendance during examinations mentioned in my last Annual Report, has been scarcely perceptible this season, owing to increased interest in the work shown by the pupils, and the greater desire on the part of the teachers in the schools to allow the pupils to attend.

The interest awakened by the school is very great; the fact that during the year, the rooms and method have been described in *Harper's Weekly*, and full page illustrations of the work shown, prove its far-reaching character. Many teachers and others from a distance have been in attendance to learn the system.

THE AWARD OF CERTIFICATES RECOMMENDED.

I respectfully recommend to the Committee, that for future terms, a system be devised for giving each pupil in the School who has been in regular attendance for the full term of—say two seasons—and has passed an examination or completed a certain amount of hand-work in the Departments of Drawing, Design, Modelling and Wood-work, a certificate to that effect. I feel assured that this will do a great amount of good, inspiring the pupils to new efforts, enabling them to show that they possess something of value, in the fact that they are able to do something useful with their hands. I am sure these papers will be valued by their future employers. I would also recommend something of a similar character for the teachers' class.

The following statistics furnished by Mrs. M. C. Robins, Superintendent, show the number of pupils during the term commencing September 22, 1886, to April 1, 1887.

	Tues.	Thur.	Fri.	Sat.
Children in regular attendance	155	155	155	115
Teachers	......	......	......	52
Total scholars	......	......	......	632

The present sessions of the school are as follows:—Tuesday, Thursday and Friday afternoons from half-past two to half-past four o'clock, and Saturday mornings from ten to twelve o'clock for school children, and for Public School teachers.

The classes are divided as follows:—

Designers	80
Modellers	40
Wood-workers	35
	155

J. LIBERTY TADD,
Director.

REPORT OF THE COMMITTEE ON MANUAL TRAINING SCHOOL.

To the Board of Public Education of the First School District of Pennsylvania.

GENTLEMEN: As required by the rules of the Board the Committee on the Manual Training School submit their Annual Report for 1886.

The number of pupils belonging at the beginning of the year, was	126
Admitted during the year	134
Left during the year	50
Number belonging December 31, 1886	210
Average number for the year	154.7
Average attendance, including sick	148.5
Average attendance, excluding sick	140.6
Percentage of average attendance, including sick	96

During the last summer the capacity of the School was increased by the erection of a one-story brick building twenty-five feet wide, occupying the space on the east of the old building. This was fitted up as a blacksmith shop and foundry, and the iron-work shop was removed to it, so as to gain more room in the main building for the wood-workshop. The number of benches in the latter was increased to thirty-six, and four wood-turning lathes have been added.

These changes were made necessary by the admission of the second class (C) in September, and the promotion of the first class (B) to pattern work, forging, and moulding. Some of the appliances for these studies (and some of the study), were necessarily postponed until January of this year, though belonging in the course from September, 1886, on account of the insufficiency of our appropriation. The study of Physics for the same reason was not begun until January.

The resignation of Lieut. Crawford and the appointment of Prof. Sayre as his successor in the Principalship, have not made any break in the progress of the school; Prof. Sayre being entirely in sympathy with the Manual features of the instruction, and bringing to his work as Principal the experience of many years, both as head of a school and as a general and special teacher, part of the time in this school. In fact, with the improvements in arrangement and method which have come by our experience, the class admitted in September last is now much farther advanced than the first class at the corresponding date last year.

The number of visitors is so large, and so many inquiries are made in regard to the school, that the Principal has, by the authority of the Committee, prepared a Hand-Book and Catalogue, giving such information as is usually desired. Copies of this will be furnished to the members of the Board.

Respectfully submitted,

J. S. WHITNEY,
A. M. SPANGLER,
JAMES FREEBORN,
ISAAC A. SHEPPARD,
EDWARD LEWIS."

The delay in the printing of this volume permits the insertion here of the following extracts from the admirable report made by Superintendent Mac Alister of Philadelphia, for the year 1888, which came to hand September 12th, 1889. This report is of great interest as showing the progress made since the somewhat recent introduction of the various phases of industrial training in the public schools of the city. The pages relating to the Kindergartens would naturally have been included among the papers which are grouped in Appendix "J." (see pages 631–708) had not that Appendix been stereotyped before the receipt of this later report.

These pages are, however, of so much value that they are inserted here. Of value, first: As showing the place of the Kindergarten in a system of public education, and the importance of this class of schools, in the estimation of an educator so experienced and distinguished as is Superintendent Mac Alister, as was fully set forth in this paper, read by him at the public meeting held on the occasion of the formal transfer of the Kindergartens from the Sub-Primary School Society to the Board of Public Education, January 20th, 1887, and, second: As showing some of the difficulties experienced in the endeavor to include true Kindergartens in a system of public schools. It is evident that the problem had not been satisfactorily solved during the two years of experiment in Philadelphia. What Superintendent Mac Alister says on the need of properly trained teachers and of having the best teachers in the elementary schools, is worthy of thoughtful consideration by all who have to do with schools.

FROM THE ANNUAL REPORT BY SUPERINTENDENT MAC ALISTER FOR THE YEAR 1888.

"MANUAL TRAINING.

No one having the slightest interest in education can have failed to notice the attention which the question of manual training has been exciting during the past few years. Indeed, it may be said without exaggeration to be the leading educational question of the day. In teachers' conventions, boards of education, educational journals and the daily papers, it is now more discussed than any other school problem. The necessity for some modification in the instruction and training given in the public schools that shall bring them more into harmony with existing social conditions is very generally admitted, and it is useless to deny that this demand points in the direction of rendering the schools more practical in the highest and best sense of that term. It may justly be said that this new feature of education has been more heartily welcomed, and that more has been done in putting it into practical operation in Philadelphia than in any other city of this country. A good deal has been said and written on the subject here: but in view of the experience we have gone through and the fact that no small degree of misconception still exists with respect to what manual training means and what it undertakes to do, it has been deemed advisable to restate the leading principles upon which it rests its claim as one of the most important and far-reaching educational reforms of the present century.

THE OBJECT OF EDUCATION AND THE PROVINCE OF ELEMENTARY SCHOOLS.

Much of the confusion which exists in the public mind concerning the movement is due, I believe, to the want of a term which would adequately designate the nature and object of the training it is proposed to introduce into the school curriculum. The use of the term "industrial" is, I think, unfortunate. It has a well-accepted meaning, and very naturally leads to the supposition that what is intended is the teaching of specific occupations. The term "manual training" is to be preferred, but that also is to some extent misleading. Speaking for myself, I must repudiate any intention of specializing the work of the elementary schools in the direction of economic production. The object of the public school is education in its broadest sense. If industrial or manual training cannot be shown to be education in this sense, it has no place in the public school. We have no more right to teach carpentry or blacksmithing than we have to teach law or medicine. The supreme end of education is the harmonious development of all the powers of a human being. Whatever ministers to this end is education; whatever interferes with its accomplishment, no matter how valuable in itself, belongs outside of the elementary school.

A WISE CAUTION.

It is well, also, that we should be on our guard against a kind of *pseudo* manual training that is finding its way into the schools. As is always the case with new movements, there is a good deal of experimenting with little knacks which do nothing for either discipline or knowledge. These are put forward by well-meaning persons as manual training, and great harm is done in this way in misleading the public and wasting the time and energies of pupils.

THE PROPER CLAIMS TO BE URGED FOR THE INTRODUCTION OF MANUAL TRAINING IN SCHOOLS.

Manual training is founded upon the claim that it gives a more complete education than is afforded by the course of instruction now followed in the schools. It undertakes so to modify the existing methods of training as to yield an education that shall make the graduate of the public school a more fully developed and efficient member of society. The instruction given in the schools is too one-sided. It cultivates chiefly the intellectual powers to the neglect of the physical and moral. Lord Bacon, long ago, stated the object of education to be "the cultivation of a just and legitimate familiarity betwixt the mind and things." No better definition of the office of the teacher could be given. To a very large extent the schools neglect the training of those powers which bring the mind into true relations with its environment. A very large portion of the time of pupils in schools of every grade is devoted to the study of words. Educational reformers for nearly three hundred years have been seeking to remedy this defect. The introduction of object lessons and of science instruction were well-meant efforts in this direction, and manual training is, in fact, nothing more than the further extension of the same principle. It seeks to train the hand and the eye, not for the purpose of superseding the action of the mind, but as the efficient agents of the mind in gaining a truer and ampler knowledge of the world. That dominion over nature which the inductive philosophy proclaimed as the object of all science can only be obtained on the lines which Bacon laid down. Emerson says in his terse way that "manual labor is the study of the external world." It is in the spirit of this maxim that the new education seeks to widen the training of children in the direction of the harmonious development of mind and body through such agencies as the best experience may dictate.

THE PSYCHOLOGICAL BASIS OF MANUAL TRAINING.

There is a psychological foundation for manual training which should not be overlooked. All educationists are now of one mind that the first duty of the teacher is the cultivation of the perceptive powers. No matter what system of philosophy we may profess, we are all agreed that knowledge begins in perception. The tactual and visual perceptions are by far the most important. "The former of these gives us the most direct mode of apprehending things; the latter, the largest grasp of external things, of any of the modes of perception."* The progress of perception grows with the increase of the power of visual and tactual discrimination. Now the purpose of manual education is primarily the training of the hand and eye. Hence drawing, as a mode of cultivating visual perception, is made one of its prominent features; and the introduction of tools in connection with wood, iron and other materials is simply for the purpose of so cultivating the hand as to enable the mind to attain to a larger and more exact knowledge of things as they exist in nature and are used in the industrial arts. It would therefore be easy to show that the introduction of manual work into the schools is important because of the effect it would have upon the mind itself. The processes of manual training afford a better means of cultivating the faculties of reason and judgment than many things which now find place in the courses of instruction. Measurements, comparisons, the adjustment of means to ends, the co-operation of mind, hand and eye, all conduce to a broader mental culture than can be gotten from many of the studies which at present usurp so large a portion of the pupils' time.

RESULTS IN SCHOOL WORK OF MANUAL TRAINING EXPERIMENTS.

We do not need to depend wholly upon theory for the correctness of this view of manual training. Experience has shown that manual training so stimulates the general intelligence of pupils that the time occupied in the laboratories more than compensates for the amount of text-book work which it supplants. It would be easy to find ample testimony to this effect. The schools of a generation ago were certainly inferior to the schools of to-day as to teaching, text-books and other appliances; but no one will gainsay the statement that they produced men and women possessing a mental and moral force of character quite equal to those of our own time. Is not this largely to be accounted for by the fact that, while the advantages were poorer and less time was spent in school, the boys and girls, in the rural life which then chiefly prevailed, were brought more largely into contact with things through work upon the farm and in the home, and their mental resources were thereby increased to a degree that the purely intellectual drill and the memorizing processes of the present day cannot be made to yield? The introduction of sewing into the girls' schools of this city, which occupies from one to two hours per week, has in no way impaired the results obtained in the other studies. In the Manual Training School, the work done by the boys in mathematics, literature and history is, to say the least, in no respect inferior to that of schools of a similar grade in which the whole time is occupied with class-room work.

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*Sully.—Outlines of Psychology.

PRACTICAL REASONS FOR INTRODUCING THIS NEW STUDY.

But there are more practical reasons for making manual training a part of the education given in the public schools. Its introduction would bring our education into closer harmony with the spirit and tendencies of the present age. No one will deny that it is the duty of the State to make the schools minister to the actual necessities of our civilization. Herbert Spencer declares that "the function which education has to discharge is to prepare us for complete living," a proposition which has withstood no small amount of adverse criticism; and Emerson, in one of his wise sentences, says that "the great object of education should be commensurate with the object of life." If we acted in the spirit of these maxims, we should hear less of the objection so often urged, that the education given in the schools is not sufficiently practical.

I would not be understood as arguing for practical education simply as such. At the same time, I believe that the education of a community should have direct reference to its social needs. This is eminently the age of industrialism. Science and its applications to the arts and industries of life reign supreme. The wealth, power and greatness of a nation depend upon its natural resources and the quality and quantity of its skilled labor. As Carlyle says, "The proper Epic of this world is not now 'Arms and the Man;' no, it is now 'Tools and the Man;' that, henceforth, to all time, is now our Epic." It is impossible for the schools to ignore this condition of things. It is not our business to train boys and girls to be mere bread winners, but we must see to it that the education we give to them confers the power to hold their own in the struggle of life upon which they must sooner or later enter. I have no sympathy with those who claim that the public school gives too much education to the masses of the people. It is impossible to over educate any human being. The only question is as to the kind of education which should be furnished. We must train our boys to believe in work; to respect work; to seek work. This should be a part of their education; and the way to do it is not to teach them trades in the public schools, but to broaden the general culture which those schools give in such ways that the young people shall begin their career in sympathy with the social conditions which surround them; will seek for success, independence, happiness, by striving, not against, but with the forces which compel success and its rewards.

THE NEW STUDY HEARTILY ENDORSED.

It is my sincere conviction that the best means of doing this is to put manual training into the curriculum of the common schools. As at present constituted, the schools are directed almost wholly toward a literary outcome. The traditions of the past are still all-powerful in the common school as well as in the college. We need to make our education more real. In doing this, we shall not make it less noble and refining, but we shall give to the children a wider vision and a braver heart, and we shall send them forth into the world better able to deal with the realities of life and to discharge its duties fitly and and successfully.

ONLY THE INCREASED SKILL OF THE LABORER CAN GIVE TO HIM AN INCREASED SHARE IN THE PRODUCTS OF HIS LABOR.

There is another aspect in which the introduction of manual training may be viewed. The great question of the hour is the struggle between labor and wealth. This question cannot be put out of sight. We are gradually coming to see that one of the best ways to meet the difficulties which it raises is to elevate the worker himself. What the working-man is seeking is a larger participation in the fruits of his industry; but this can only be accomplished by the laborer putting more skill and intelligence into the work of his hands. The problem for every civilized nation to-day is how the largest amount of intellectual development can be given to its industrial population. There will be no peace between labor and capital until labor has recognized the necessity for intelligence, and capital has recognized the just rights of labor, enlightened and ennobled by knowledge. What is needed is to bring thought and labor together; to make every worker a thinker and every thinker a worker; and there is no place where this can be done so well as in the school. It is here that enduring principles and habits can best be formed. We talk a good deal of the public schools as the nurseries of good citizenship. We shall have a better right to make this claim for them when they undertake to fit their pupils for the actual conditions of existence; for the world as they will find it—a world in which it is a privilege as well as a necessity to work; and in which work, animated and directed by the power which comes from a well-trained mind, cannot fail of its just appreciation and reward.

GENERAL ADVANTAGES TO RESULT FROM PUTTING MANUAL TRAINING IN SCHOOLS.

There are many other advantages which would accrue from the introduction of manual training into the public schools, but to which only the briefest allusion can be made in this place. Not the least of these advantages would be the larger degree of confidence and support which the schools would receive from the general public. It is useless for us to conceal the growing dissatisfaction with many of the features of the public school system. Some of these objections are no doubt ill-founded; but there are others to which no valid answer can be made. What the people want is schools more in accordance with the real needs of society and the principles which the advance of scientific methods of instruction demands. Nearly every city experiences difficulty in getting the appropriations which are necessary to keep pace with the growth of population and the improvement of the schools. I believe a larger degree of sympathy and support for the public schools would be obtained, if we could only make up our minds to set aside the antiquated and useless work that is required of pupils, and substitute in place of it more rational methods of development and training. I have no doubt, also, that the period of school attendance would be considerably prolonged by such a course. The lament in every city is that the mass of the children spend so little time in the schools. The tens of thousands are in the primary grades; the few thousands in the upper grades and high schools The people, I think, would be quick to discover the advantages of giving their children more education, if this education could be made better in quality, which is the same as saying more available for the practical uses of life. I am convinced that the introduction of manual education would do more to rid the schools of tasks upon which the time of the pupils now runs to waste than anything we could do for them. The eight years of the common school course should certainly yield better results than are now obtained. A great deal that we persist in regarding as absolutely essential will sooner or later have to be discarded, and the modification of the course of instruction, in accordance with the general principles here indicated, will, I am sure, tend to hasten the coming of this better day.

MANUAL TRAINING DEPARTMENTS.

The efforts which have been made to apply the principles outlined above in our own schools, during the past five years, have created so much interest that it seems desirable to recite briefly how far and in what directions the work of organizing the instruction and training has proceeded.

The manual training now given in the Philadelphia schools is embraced in the following departments:—

1. Manual Training School.
2. Industrial Art School.
3. Sewing in Girls' Schools.
4. Cookery in Girls' Schools.
5. The Kindergartens.

To these might be added Clay Modeling and Paper Folding and Cutting which have been gradually finding their way into the primary schools; but as these branches have not yet been systematically developed they cannot be regarded as an established part of the regular course of instruction. Some account of the progress made in this work will, however, be given further on.

A statement of the present condition of each of these departments will, I am sure, be acceptable.

I.—Manual Training School.

The Manual Training School provides a three year's course of instruction in some respects parallel with that given in the High School. It is less extended in the departments of language, literature and mathematics, so as to make room for the courses in manual training and drawing which are its special features. Boys are admitted after having finished the grammar course on precisely the same standard as is prescribed for admission to the High School. The first class was graduated last year. The instruction is arranged in five courses :—

1. Language and literature.
2. Science.
3. Mathematics.
4. Drawing.
5. Manual Training.

As the best means of indicating the scope and character of the manual training, I have given in the appendix the outline of this course, and also the course in drawing, taken from the circular of the school. While these two courses are the distinctive features of the school, it must be borne in mind that the others are not neglected. On account of its novelty the manual training is apt to make the strongest impression upon visitors, and they do not always discover that the literary and scientific training are just as fully recognized and provided for. Anything like a one-sided culture is carefully avoided, the aim of the school being to give to each branch, whether scholastic or manual, such relative importance as shall lead to a fuller and more symmetrical development of mind and body than has been possible under the old systems of secondary education.

The success which has attended the Manual Training School from the first is the best guarantee of the soundness of the principles upon which it is organized and conducted. Beginning a little more than three years ago, in a very humble way, it has steadily grown in public confidence and approval. It has more than justified every claim that was made in its behalf. Every available foot of space is now occupied, and it may safely be predicted that it will be impossible to admit nearly all the pupils who will be applying for admission next term. The Board will therefore be brought face to face with the question whether the time has not come for opening another manual training school in such a quarter of the city as may be deemed most advantageous to the public interests. The original intention of the Board was to establish four or five of these schools as fast as a just regard for the other departments of the school system would permit, and the growing demand for the kind of education which this school represents will render the fulfillment of this purpose a necessity at no very remote date.

II.—INDUSTRIAL ART SCHOOL.

It was in this school that the attempt to introduce manual training into the public schools of this city was first made. It originated with Mr. Charles G. Leland, the well-known *litterateur*, who devoted himself to the experiment with all the vigor and enthusiasm so characteristic of his nature. It was a labor of love with him, and he spent several years in the work without other reward than the success which attended his efforts to promote an interest in the educational movement which he so ably represented. The school attracted much attention, and its influence was widely felt through the publications in which Mr. Leland so attractively set forth the principles on which it was founded, and the objects it was intended to accomplish. After Mr. Leland severed his connection with the school, it was reorganized by the Board and brought into more intimate and regular relations with the general school system. The school is open to boys and girls who come from the various grammar schools of the city. The pupils attend two hours per week, permission being granted for this purpose, on the request of their parents, by the principals of the schools to which they belong. There are now about seven hundred boys and girls, from ten to fifteen years of age, on the roll. This is but a small proportion of the whole number of grammar school pupils ; but the Industrial Art School has served the important purpose of keeping up an active interest in manual training, and furnishing a practical demonstration of its value, till such time as an elementary scheme can be worked out and put into operation throughout the city. Mr. J. Liberty Tadd followed Mr. Leland as Director, and under him the instruction has been so systematized as to give it a larger disciplinary value as a means of general education. The revised course of instruction and training, which extends through two years, will be found in the appendix.

III.—SEWING.

Sewing was made a part of the regular instruction in the girls' schools in 1885. The success which had attended its introduction into the Girls' Normal School, several years prior, opened the way for this important step. At first a few teachers were employed, as an experiment, in schools situated in different parts of the city ;

but a few months subsequently, the Board felt warranted in extending the instruction into all the girls' secondary and grammar schools. As now organized, the girls take up the sewing at the beginning of their third year of school, and keep on through the succeeding grades of the local schools, and the normal school if they should go there. At present about thirty-five thousand girls receive regular and systematic instruction in the use of the needle. The instruction is limited to plain sewing, because it has been found that this yields better training as well as more practical results than the fancy-work which is sometimes taught. All the instruction is given by special teachers, of whom there are now forty-four in the employment of the Board. The question is often asked whether the instruction could not be entrusted to the regular class-teachers. There is no abstract reason why an exception should be made of a branch so intimately connected with the pursuits of women; but experience has shown that it is safer to intrust a new feature of school work so radical as this to specialists. The regular teacher has already so much responsibility that she is loath to undertake a new study, with the methods and managements of which she is wholly unacquainted. Wherever sewing forms a feature of school instruction upon a large scale, special teachers have been found a necessity to ensure satisfactory results. Future experience may lead to a different conclusion; but I am strongly convinced that at present the wise course is to depend upon teachers whose attention is concentrated upon this one branch, and who can be held to a strict responsibility for the work.

The place which the sewing now holds in the schools has not been reached without considerable discussion and opposition. But all this has passed away, and the public have accepted the results as demonstrating the value and importance of the training which it gives. The testimony of the principals of the girls' grammar schools has been unanimous as to the beneficial influence of the sewing lessons upon the pupils. They break up the monotony of the school; they afford a pleasant relief from the pressure of the purely intellectual studies; they cultivate respect for the work of the hands; they train to habits of neatness and order in practical affairs, and they confer an accomplishment which every girl will learn to value in after life. One needs to know something of the methods of instruction pursued in the sewing class to feel warranted in making such statements; but the many thousands who witnessed the exhibition of the classes at work, and the extensive display of articles which the girls had produced, last spring, were surprised to discover how much valuable educational training can be gotten from so familiar an art, when its processes are developed by a skilful teacher.

The sewing lesson is a good example of the dignity which can be given to any form of manual work upon which intelligence is brought to bear, and it points the way to methods of training that will help to bring the school into closer relations with the home, and thereby raise the general level of human culture among the masses of the people.

A synopsis of the scheme of instruction and training in sewing is given in the appendix.

IV.—Cookery Classes.

The introduction of cookery as a branch of instruction in the public schools is based upon reasons precisely similar to those which may be urged in behalf of sewing. These have been already presented in a general way, but inasmuch as the cookery has not been so fully discussed and is still regarded as an experiment, it seems proper that the grounds upon which it rests should be more explicitly stated.

1. While much may be said in behalf of the intrinsic advantages of cookery as an element in the schooling of girls, it seems to me to belong to the larger problem as to what should be the scope and purpose of a scheme of education intended for the masses of the people. If the view which has obtained among the most eminent thinkers on education for nearly three hundred years be accepted, viz.: that it must have reference to life in its broadest relations, it would be easy to show why an art which is so intimately connected with social well-being should find a place in the school.

Political philosophers have demonstrated the important bearing which a sufficient supply of wholesome food has upon the physical, moral and economic conditions of a community; yet it is a well-known fact that ignorance and wastefulness in the preparation of food prevail extensively among our people. The widespread interest in domestic as well as public hygiene which has been growing up of late years has borne good fruit in many directions; but nowhere has it proved more beneficial than in calling attention to the importance of cookery as one of the most important economies in right living. Indeed, so fully has this conviction taken hold of the minds of intelligent people, that no careful mother now considers her daughter's education completed without a course in one of the special schools for teaching this branch, which are to be found in every city. But these private establishments reach only a limited number of the girls who are by and by to have the care or direction of households.

It is therefore pertinent to ask whether a branch of knowledge and training which has so many valuable and useful features should not be recognized in the schools which are maintained for the benefit of all. This question is now receiving serious consideration in nearly every part of the country, and it has already been affirmatively answered in a good many places.

THE HOME, THE CHIEF PROVINCE OF WOMAN'S CONTROL.

2. But there is a second aspect in which the teaching of cookery may be regarded. In the multiplicity of agencies that are being pressed into service for the betterment of society, we are beginning to revert to the home as the chief center of the noblest as well as the most practical influences that go to the building up of all that is best in human life. With us, as with all the members of that branch of the Aryan family to which we belong, the home is the sacred place where every virtue has its birth and every social duty finds its strongest nurture. Hence the desire which educationists who take the right view of their work have always felt to connect the school with the family, the teacher with the parent. Any view of education which loses sight of this purpose must of necessity be partial and fail to recognize some of the forces which are most potent in the development and training of a human being.

It is because the cookery lessons, like the sewing lessons, bring the school and the home into line with each other in some of the most real and practical affairs of life that they are finding favor with educational authorities. The public schools can not much longer confine themselves to scholastic training. They must open the way to those kinds of knowledge and skill, and they must strive to form those habits, that tend to dignify every relation and occupation of life.

The duties that appertain to home must be numbered among the most important acquirements of a girl's education, and the school which undertakes its share of responsibility in supplying them is not departing from its proper sphere but is fulfilling one of the chief functions that give it a right to exist. Surely no school can be regarded as pursuing unworthy ends in training girls to do with intelligence and pleasure the things that are too often looked upon as involving only degradation and drudgery.

EDUCATIONAL VALUE OF COOKERY CLASSES.

3. A good deal might be said in favor of the purely educational value of the cookery classes. The instruction necessarily involves a good deal of scientific knowledge. The chemical composition and physiological effects of food are considered in connection with its preparation, and the information derived in this way is often of more value than if obtained from the study of the same principles as they are generally taught in the school-room. The instruction partakes largely of the nature of object-teaching in its best form, and is calculated to leave a much stronger impression upon the mind than can be made by a mere statement of scientific facts or even by such experiments as are possible in the class-room of a grammar school.

THE PUBLIC EDUCATION SOCIETY OF PHILADELPHIA.

The introduction of cookery into the public schools is due to the Public Education Society, an organization which has rendered valuable service in promoting many desirable educational reforms in this city. A proposition was made by this association in 1887 to pay all the expense incident to conducting an experimental class in the Girls' Normal School. After careful consideration the offer was accepted and work was begun in September of that year. The experiment was carefully watched, and by the close of the June term, the Board became satisfied, not only of the value of the instruction and training received by the young ladies, but the practicability of making it a regular branch of the curriculum. Arrangements looking to this end were effected by the Board's assuming the entire responsibility of the instruction, and every young lady who now graduates from the school receives a course of lessons in the theory and practice of cookery.

Last summer the same society came forward again and offered to do for the girls' grammar schools what had proved so successful in the Normal School. The Board accepted this liberal tender, and a number of classes—amounting altogether to about seven hundred pupils—were organized and started in October, 1888. The demand for admission was so urgent that twice that number could doubtless have been enrolled if the accommodations and resources at command had permitted. Here is evidence enough that the public appreciates and is ready to avail itself of this branch of instruction. On account of its central location the Normal School was chosen for these classes.

THE PUPILS ARE EAGER TO ATTEND THE COOKERY CLASSES.

In spite of the fact that the girls have to sacrifice two hours per week of school time for these lessons, the classes have been well attended, and the practicability of organizing and carrying forward a system of instruction that would include all the girls of proper age in the grammar schools has been clearly established. The girls have taken great interest in the work and its value is thoroughly appreciated alike by them and their parents. At present the course laid out for the classes includes twenty lessons. It is a question, however, whether it would not be advisable to extend the number of lessons to twenty-five, so that more time could be given to the scientific features of the instruction ; but this is a matter of detail which can be settled by a larger experience.

From what has been said it is apparent that the problem of giving instruction in cookery in the schools has been fully solved. A second teacher of this branch will be required at the Normal School next term on account of the increased size of the classes. With respect to the grammar school classes the experiment may be regarded as entirely satisfactory, and all that is needed to make provision for the instruction of all the girls of proper age in this department is the opening of a sufficient number of school-kitchens in such localities as will be conveniently accessible to the largest number of pupils. If the necessary appropriation can be secured, the Board can, by another year, put the cookery instruction upon the same footing as the sewing; and bring within the reach of every girl who remains a sufficient length of time in the schools a valuable accomplishment which, while enlarging her knowledge, will render her more efficient in every relation of life that she may be called upon to assume.

THE KINDERGARTENS.

"In enumerating above the several departments of manual training, the kindergartens were placed under this general heading. This was done because the philosophy of their founder, Friedrich Froebel, furnishes the best exposition of the principles upon which manual training rests, and the methods pursued in the kindergarten illustrate so admirably the application of these principles to the training of children. The subject is so important in itself, however, and will occupy so much space that, as will be noticed, it has been placed under a separate title.

THE CITIZENS' SOCIETIES IN AID OF PUBLIC SCHOOL EDUCATION IN PHILADELPHIA.

The kindergartens owe their origin to the Sub-Primary School Society. Philadelphia has been peculiarly fortunate in the possession of associations formed to co-operate with the Board of Education in promoting improvements in the public schools. Seventy years ago the foundations of the public school system were laid by a body of distinguished citizens who had associated themselves for this purpose. The Public Education Society, to which reference has already been made, has been influential in cultivating public sentiment when needed in behalf of movements set on foot by the Board, besides furnishing such tangible help as defraying the expenses of the experimental classes in cookery and the Exhibition of Industrial School Work hereafter to be described.

The Sub-Primary School Society was organized for the express purpose of establishing the kindergartens. A few ladies and gentlemen, feeling the need of doing something for the education of a class of young children which the public schools did not reach, came together in 1879, and commenced the work in a quiet, unostentatious way. A kindergarten was started in the public school at Twenty-second and Locust Streets, six persons subscribing $100 each to defray the expenses. Other kindergartens were opened, and the movement progressed to such an extent that in 1881, the Sub-Primary School Society was incorporated to care for the growing enterprise. Under its management the work grew so rapidly that in 1883 an appeal was made to Councils, which resulted in an appropriation of $5,000 for the maintenance of free kindergartens. In 1885 the appropriation was increased to $7,500 ; the Sub-Primary School Society meanwhile raising by voluntary subscriptions a sum almost equal to that granted by the city. These appropriations were expended under the direction of the Board of Public Education, which thus came to stand as a sort of foster-father to the kindergartens.

THE KINDERGARTENS ASSUMED BY THE CITY AUTHORITIES.

It was but one step farther to the adoption of the kindergartens by the Board. In 1886 Councils added the sum of $5,000 to the school budget for the support of kindergartens, and on the first day of January, 1887, they passed from the control of the Sub-Primary School Society to the Board of Public Education and became an integral part of the educational system of the city. The formal transfer was made at a public meeting held in the hall of the College of Physicians, January 20, 1887, at which the Hon. Robert N. Wilson, Judge of the Court of Common Pleas, presided, and President Edward T. Steel accepted the kindergartens on behalf of the Board of Education.

In some remarks which I had the honor to make at this meeting, an attempt was made to indicate the extent of the responsibility which the city was assuming, to state the nature and purpose of the kindergarten as a means of child education, and to point out the place which it might be expected to fill in the general school system. I have found no occasion to change the views expressed at that time, and prefer, therefore, to give the substance of these remarks rather than to reproduce what was then said in another form.

"THE PLACE OF THE KINDERGARTEN IN THE PUBLIC SCHOOL SYSTEM."

REMARKS BY SUPERINTENDENT MAC ALISTER, JANUARY 20TH, 1887, ON THE OCCASION OF THE TRANSFER OF THESE SCHOOLS BY THE SUB-PRIMARY SOCIETY TO THE BOARD OF PUBLIC EDUCATION.

I feel that it is unnecessary to add a single word of congratulation upon the event which has brought us together this afternoon. The Sub-Primary School Society has done its work so well, the Board of Public Education has shown so hospitable a feeling towards the child whose foster-father it is about to become, the City Councils have so generously attested their interest in the movement, and the public sentiment is so well represented by this large and intelligent audience, that it would be superfluous for me to say anything tending to increase the general satisfaction and joy which have characterized the proceedings.

I may be permitted, however, to emphasize the importance of this gathering in its relation to the public school system of the city. It must prove a source of great encouragement to those directly concerned in the management of the schools and an augury of better things to come, to see so large a number of citizens assembled to celebrate an incident purely educational in character. It must be taken as an evidence of the increasing interest of the public in matters which, although of vital importance, are apt to be neglected in the multitude of duties which occupy so much of the time and energy of the men and women of a great city; but it cannot be too constantly borne in mind that schools cannot grow and prosper without the active sympathy and support to be derived from the intelligence and morality of the community whose highest welfare they are intended to promote. This meeting, I am sure, cannot fail to create in the minds of teachers, school-officers and all who are in any way connected with the public education of Philadelphia, a realizing sense of the fact that our people are deeply interested in their schools, and are willing and anxious to do anything which promises to extend their influence or improve their quality.

THE IMPORTANCE OF THIS STEP.

It needs no prophet to say that this day will be a memorable one in the annals of the public school system of Philadelphia. A step has been taken which, if not checked by some untoward influence, will have far-reaching and beneficent effects upon the social well-being of the community. A great deal depends upon the character of the education which our children receive. The prosperity and happiness of this city stand more directly related to the public schools it maintains than to any other institution in its midst. The incorporation of the kindergarten into the public school system is an event of more consequence than may at first sight appear. It means really a new departure in the entire system, and the future of the schools will depend very largely upon the success or failure of the movement which has been so auspiciously inaugurated.

NEW RESPONSIBILITIES ASSUMED BY THE CITY BOARD OF EDUCATION.

And this leads me to remark that there are serious questions involved in the transfer of the kindergartens from the Sub-Primary School Society to the Board of Public Education which must not be passed over while indulging in the felicitations appropriate to this occasion. In receiving the kindergartens, the Board of Education has assumed duties and responsibilities which will tax its intelligence and patience in new directions, and call for important changes in the general administration of the schools. Among the questions which will come up will be the extension of the school system very considerably beyond its present limits. The kindergarten means a large increase in the number of children entitled to the privileges of the public schools. You must not estimate the number of children who will have to be taken care of, by the few hundreds who have been in attendance upon the kindergartens while under the management of the Sub-Primary School Society.

The moment you make the kindergarten a public institution, you open the door to the thousands of little ones between the ages of four and six who help to swell the population of the city. The kindergarten is certain to become popular. It will not take the fathers and mothers of the city long to find out the advantages of schools by which the mental and moral training of their children can be begun two years sooner than at present; and if the kindergartens are to do their best and most useful work, the Board of Education will have to plant them thickly within easy reach of the very large number of poor children who stand most in need of their fostering care. This means more school-houses, more teachers, more appliances, a larger outlay of money.

From this day, the kindergartens take on entirely new relations to the public. They cease to be a charity; they cease to be the privilege of any one class; they become the right of every parent who has children of the proper age. The kindergartens, if they are to succeed, must be thoroughly identified with the public school system of the city.

The Board of Education had better have nothing to do with them, if it does not intend to incorporate them into the general educational system. You see, therefore, into how much larger a field of action the public schools will enter; in how many ways their influence will be extended. I do not stop now to consider the benefits which will flow from these changes. My object is simply to remind you that the establishment of the kindergartens as an integral part of the public school system is a work of no small magnitude; that it is fraught with many responsibilities; and that it is only by the hearty co-operation of Councils, the Board of Public Education and the Local Boards, sustained by an enlightened and liberal public sentiment, that we may hope to lay such foundations and to rear such a superstructure as will enable the kindergartens to accomplish the work for which they have been instituted.

PUBLIC KINDERGARTENS CERTAIN TO RETURN TO THE PUBLIC ALL THEIR COST.

I desire to have it clearly understood, however, that I believe the kindergartens will be worth all that they cost. They will extend the benefits of public education in the direction where it is most needed. The great mass of the children who attend the public schools spend only about four years within their walls. The pressing necessities of life require that every member of a poor man's family shall contribute something to its support. Before the children have got beyond the simple rudiments of a common school esucation, they are withdrawn and sent forth into the world to swell the great army of its toilers. Laws prohibiting the employment of children are of no avail as against this necessity. Vast numbers of men and women have never known what childhood means. The hard realities which the struggles for mere existence crowds upon them so early, deny to them the opportunity for the growth and nurture of those qualities of mind and heart which add so much to the sum of life's enjoyment, and from the loss of which it is so hard to recover.

But we must not undervalue the little that is gained by these few years of schooling. It is of enormous benefit alike to those who receive it and to the community of which they form a part; and every addition that can be made to the school privileges of the great body of the people goes to enrich the national life—every day that their stay in school can be prolonged is so much secured in the interest of a higher civilization. The city which can add two years to the school life of the mass of its children will confer a boon whose value it would be impossible to overestimate.

The chief argument in favor of the kindergarten is that it enlarges the privileges of the schools where the greatest number can avail themselves of their benefits. It increases by just so much the possibilities of elementary education for the very large numbers of young children who now receive the smallest benefit from the schools. It is plain, therefore, that the kindergartens, while not organized exclusively in behalf of the poor, will inure chiefly to their benefit. They will provide educational opportunities that are immediately within their reach, and thus, while ministering directly to their good, can not fail to exercise a salutary influence upon the well-being of the entire community.

WHAT THE KINDERGARTEN MEANS.

I have stated thus broadly the most obvious advantage of adding the kindergarten to the public school system, but it is by no means the only one of importance. The intrinsic merit of the training which is given to the child is the great consideration which should always be put foremost in discussing the claims of the kindergarten as a part of any system of education. The kindergarten is a new thing; but this hardly excuses the mistaken views of what it is and what it aims to accomplish, which are so prevalent. It is generally regarded as an invention for entertaining little children. Nothing could be farther from the truth.

It is true that the kindergarten plants itself firmly upon the spontaneous activities of childhood, and recognizes the tendency to play as one of the strongest of these; but this is simply the starting-point of the system. From this, as a postulate, it goes on to lay down a scheme of training which aims at the harmonious development of every power and faculty of man's being. Froebel, the philosopher of childhood, from whose fertile brain and glowing heart the kindergarten proceeded, was not the first to advance this large view of human education. Pestalozzi, following in the steps of the great line of educational reformers which begins with Comenius, had proclaimed the true doctrine of human culture to consist in developing and training the physical, intellectual, and moral elements of man's nature, each in its just relations to the others, into power and use.

But it is the glory of Froebel that he, first of all, taught that this complete and symmetrical training must begin with the earliest days of childhood. The secret of the kindergarten is that it never loses sight of the fact that it is dealing with the undeveloped, untrained powers of a little child. It develops the body; it cultivates the senses; it strengthens the receptive, and calls into operation the active faculties of the mind; it trains the social feelings and makes each member of the little society feel that its happiness depends not upon itself alone, but is bound up with that of all its members. And all this is done by treating the child, not as a machine to be set in motion by the teacher, but as a living, spiritual organism which grows by the free use of its own powers, which gathers force from every effort that it puts forth, and which passes by insensible degrees from the spontaneous play of feelings and desires, to the conscious exercise of faculties that find expression in creating and doing, in the production of forms that are alike useful and beautiful, in the performance of acts that are inspired by love and duty.

KINDERGARTEN METHODS DESIRABLE FOR HIGHER GRADES-OF SCHOOLS—IN THIS LIES ITS SIGNIFICANCE.

But the kindergarten is even more than this. While furnishing a system of educational training perfectly adapted to the conditions of childhood, its fundamental principles contain the roots of a philosophy of education more truly in accordance with human nature, more complete, more practical, than any system which has ever been devised.

As already indicated, it is really the outcome of the best thought and experience of all the great thinkers and teachers who preceded Froebel. The kindergarten methods which are not involved in the special processes appropriate to little children are applicable to schools of every grade; and it will be a happy day when these methods have found their way into the primary schools, grammar schools, high schools, and normal schools of the country.

We can not close our eyes to the fact that the people are becoming more and more dissatisfied with the instruction at present given in our schools. There is an urgent demand for better results, and it behooves school officers and teachers to give heed to this call. It devolves upon them to find the remedy. My conviction is that we shall look for it in vain until we are willing to accept the motives and principles which constitute the essential spirit of Froebel's philosophy.

Our education must be made to accord more truly with the dictates of nature, and it must be brought into more intimate and direct relations with the needs of society. The age in which we are living demands a richer culture for the masses of the people than the schools, as at present constituted and managed, supply. But we shall get none of these things until our teaching has been radically changed. What has been done here to-day is, I trust, the beginning of better things for Philadelphia. Every intelligent and earnest teacher in the city must find encouragement in the fact that there has been added to its school system a feature which has won the confidence and support of every leading educator in Europe and America. I am sure that every department of our schools will, by and by, feel the inspiring influence which will flow from the presence of the kindergarten. The methods of instruction and discipline now followed can not fail to be largely modified by its principles. No thinking mind, no intelligent instructor, can withstand the witness which the kindergarten bears against formalism and tradition, and in favor of freedom and progress in education. May we not all hope that the kindergarten will prove the leaven that is to leaven the whole lump, and help to raise our education to a higher plane of power and usefulness!

If time permitted, it would be found profitable to notice some of the objections which are made to the kindergarten; but I have already trespassed too long upon your patience. There is one objection, however, to which I feel it is to be my duty to call your attention for a few moments. In reply to all that I have been saying as to the advantages of making provision for the education of young children, we are told by many well-meaning persons that little folk of so tender an age should not be sent to school; that the right place for them is their home, and that the best teacher is their mother. Far be it from me to say one word which could be construed into any distrust of the blessings of a well-conducted home or the loving care of a faithful mother; but in the progress which educational science has been making during the last half century, may we not find some reason for revising the judgments that we have been accustomed to regard as final? Experience, a well as the opinions of the ablest teachers, assure us that the sooner we begin to educate the child the better. I say educate, because we must make the broad distinction between the development and training of a human being, as Froebel understood it, and the methods of instruction which are still too common in our primary schools.

EDUCATIONAL ERRORS CONCERNING YOUNG CHILDREN.

To educate a little child, in the right sense of that term, is a very difficult task. The notions commonly entertained on this subject—notions, I fear, altogether too wide-spread—are, I beg to say, very erroneous. The skilled, experienced teachers are reserved for the higher schools, while the untrained novices, the failures in grammar schools, and, in many cases, the imperfectly educated class, are put to work in the primary grades. But no greater or more harmful mistake could be made.

There should be an unanimous protest against employing poor teachers anywhere; but the discrimination should certainly not be made against the primary schools. I give it to you as my sincerest conviction that no community will ever get the best fruits of a system of public education until it employs women of culture and refinement, of training and experience, in the lower grades of instruction! My conception of a kindergartner is that of a woman who meets all these requirements.

THE YOUNGEST CHILDREN NEED THE BEST TEACHERS.

We are beginning to find this out, and in many portions of the country the same requirements are made, and the same compensation is allowed to the teachers of the lower as to those of the higher grades. Now, given such teachers as I have described—and they are within the reach of any city that desires their services—I have no hesitation in saying that the young child can be better educated in the kindergarten and the primary school than by the unaided efforts of any mother, no matter how favorable may be the conditions which surround her. We forget how numerous are the cares and duties of a woman who has the responsibility of a household, and how little time she can give to the systematic training of her children.

THE KINDERGARTNER TO AID, NOT TO SUPERSEDE, THE MOTHER.

The kindergarten steps in, not to supersede the home, not to supplant the mother, but to supplement and complete the functions of both, so far as fuller and more thorough methods of culture are concerned. The kindergarten and the home, the kindergartner and the mother, become the closest of allies in all that relates to the physical, mental and moral well-being of the child. But all this is aside from the actual problem with which this and every large city has to deal.

There are thousands of children in Philadelphia who know little or nothing of the influences which go to make up a home; whose only chance of receiving any training worthy of the name must come from other sources. Not only this, but there are multitudes of little ones who spend a large portion of their waking hours upon the streets, drinking in at every sense, evil influences that poison the springs of their young life. It is to this class that the kindergarten opens its inviting doors, and asks them to come and receive the skilful training, the watchful care, the loving kindness, which may prove the saving grace of their lives. To these little ones, the kindergarten becomes all that home means to your children and to mine. It opens vistas of happiness which would otherwise have remained forever closed to them ; it brightens their daily life with the charms that attend the normal exercise of body, mind and heart; and it plants deep down in their inmost being seeds that long afterwards may bear fruitage in pure, useful and worthy lives.

HAVE GOOD KINDERGARTENS OR NONE.

I shall have to omit any reference to some practical questions that will come up at an early day in connection with the management of the kindergartens. Let me simply call your attention to the importance of organizing them upon the highest plane of excellence. A poor school of any kind is one of the most worthless agencies in the social economy; but a poor kindergarten is still worse. The kindergarten is yet so new in this country, its purposes are so little understood, and the supply of competent kindergartners is so limited, that there is constant danger of its degenerating into meaningless routine and aimless effort. Far better have no kindergartens at all, than such as are mere travesties of the name. I must not conceal from you that not a few of this kind have managed to spring into existence everywhere.

A NORMAL KINDERGARTEN FOR TRAINING THE TEACHERS A NECESSITY.

Nothing will maintain the kindergarten in its purity but the presence of broadly cultured and thoroughly trained kindergartners. This is the only condition on which it can live, and this is the practical difficulty which must be encountered wherever its establishment upon a large scale is attempted. We must expect to meet it here, and I can see no safeguard but in providing a training-school of our own—in connection with the Normal School, if that is thought best—from which we can draw an ample supply of kindergartners fully equipped for the work. No doubt the attention of the Board of Education will be called to this necessity at an early day, and I am sure that, with the right public sentiment on the subject, it can be depended upon to take such action as the exigencies of the case may require.

But we need have no fears for the future. The rapid advancement which public education has made in Philadelphia during the past few years is the strongest assurance that this effort to enlarge the scope and increase the efficiency of the school system will be carried to a successful issue, as is every good cause which promises to promote the intelligence, the morality, the prosperity and the happiness of the people."

THE EXPERIMENT NOT FREE FROM DIFFICULTIES.

The kindergartens have now been in existence two years; but it is still too early to express any positive opinion as to what has been accomplished by them. This much should be said however, that they have not yet had a fair chance to demonstrate their real character and value as a part of the school system. Many of them have been conducted in rented rooms wholly disconnected with the public schools. Those that have been carried on in school buildings have in some cases been poorly accommodated. Opportunities have not been afforded for experimenting with kindergartens in neighborhoods where they could be put to better tests. The training-school for kindergartens made an unfortunate start, and it is only since last September that it can be said to have acquired a fixed existence. There have been a number of changes in the administration of the kindergartens, some of which have not tended to increase their stability. These various experiences have not been favorable to the cultivation of that sentiment which is essential to give the kindergartens the standing which they need to do efficient work, and it seems to me desirable that a more definite policy respecting them should be adopted and adhered to. It does not seem desirable, however, to go into the discussion of these matters at this time, but for the purpose of directing attention to them, the following suggestions are submitted for the careful consideration of the Board :—

RECOMMENDATIONS AND SUGGESTIONS.

1. It would help to promote the incorporation of the kindergartens into the school system, if they could all be transferred to school buildings. The money now spent for rent could be employed in increasing the number of kindergartens, and the

public would be brought into closer relations with them. If a room could be set apart for a kindergarten in new primary buildings as they are opened, these ends would be gradually secured, and the way would be prepared for that full identification of the kindergartens with the other departments of the school system which should be constantly kept in view.

2. It is a question whether the plan upon which the training of kindergartners is now carried on in the Normal School will accomplish the object intended. There can be only one opinion as to the first experiment which was tried. It was doomed from the first, and accomplished nothing beyond certifying a few kindergartners to meet the immediate needs of the city. The present arrangement must still be regarded as an experiment. It proposes to give the entire Normal Class of over two hundred members such a training in the philosophy and practice of the kindergarten as will fit them to take charge of kindergartens at the end of the year. This is to be done in connection with all the work that is required to qualify them for the regular teacher's certificate. There can be no doubt as to the value of the general knowledge of the kindergarten in enlarging their views of educational work and increasing their resources as teachers, which the class will obtain; but it seems to me doubtful whether enough instruction and training in the specific work of the kindergarten can be given to prepare the pupils for taking upon themselves the responsibility of managing all the details of a kindergarten. It would be premature to express a positive opinion on this subject at the present stage of the experiment; but the result is so important to the whole movement that it will be waited for with no small degree of anxiety.

3. The change quite recently made in transforming the kindergartens into divisions of the primary schools and placing them under the direction of the principals seems to me to have been made without that due deliberation which so important a step demands. As has been insisted upon above, this is the goal to be kept in view; but there is much to be accomplished before it can be reached. A kindergarten is not safe in the hands of any one who has not become indoctrinated with its aims and methods. It can only flourish in congenial soil. A great work has yet to be done in cultivating public sentiment in its favor and creating the conditions which will make its influence potent for good. Until this has been accomplished, it is jeopardizing its existence to hasten its consolidation with the other departments. That will come in due course, but certainly the time is not yet.

THE EXHIBITION OF INDUSTRIAL WORK; MAY, 1888.

The Exhibition of Industrial Work held last May was so important an incident in the history of the public schools of this city that it seems proper that some record of it should be made in this report. For a year or two previous, the small local exhibitions which had been held at the close of the terms in a number of schools had been largely attended; but the friends of the advanced position taken by this city on the question of manual training felt that a larger opportunity should be afforded to inform the people as to the nature of these new features of the public education, and to bring before them in tangible form the methods employed and the practical outcome of the training given. Although no formal action was taken by the Board, there could be no doubt as to its willingness to favor such a scheme. The insuperable difficulty which stood in the way was the very considerable amount of money that would be needed to defray the expenses of an exhibition which would present the various features of the manual instruction upon a scale and in a manner creditable to the schools of the city. The Board had no funds available for this purpose, and it did not feel justified in asking for a transfer of any portion of the appropriations specifically set apart for the several departments of the school system. But the assistance needed in this perplexity was soon forthcoming.

The Public Education Society came forward with a generous offer to become responsible for the entire expense of the exhibition. The only restriction it imposed was that nothing should be left undone which might be necessary to bring the exhibition up to the highest expectations of the public. This liberal and public-spirited proposition was accepted by the Board, a special committee was appointed, and in due time the exhibition was opened to the public.

A NOTABLE SUCCESS.

The scope and purpose of the exhibition were fully and explicitly set forth in the circular issued at the time. * * * . It affords me very great satisfaction to be able to state that every part of this extended program was fully realized. The great hall in which the exhibition was held was filled to overflowing with work representing several of the newer features of the instruction and training given in the schools, and the throngs which came to see the products of the children's intelligence and skill bore testimony to the growing interest which the public take in the improvement of the public education of the city.

* * * * * * *

At the close of the exhibition a report was made by the special committee to the Board, containing a statement of all the details connected with the management of the exhibition and a good deal of information which will be of permanent value. Among other interesting facts it was stated that not less than 15,000 square feet of wall, table and platform space was occupied by the various exhibits, and that 85,000 persons visited the exhibition during the four days that it was in progress. The general sentiment entertained concerning the exhibition is no doubt correctly expressed in the concluding paragraph of the report:—

"The Committee cannot too warmly express its approval of the spirit displayed by Philadelphia in this great educational movement. The Exhibition is to be regarded as one of the most important events in our school history—important in its immediate influence, but vastly more so in its bearing upon the future. The feasibility of a general system of co-education of head and hand has been established beyond peradventure; and in presenting with more than usual detail the permanent features of the Exhibition, the Committee have been actuated solely by the desire to place on permanent record the part taken by Philadelphia in the inauguration of what must be regarded as the most important educational reform of the present time."

"Respectfully submitted,

JAMES MAC ALISTER,
Superintendent Public Schools."

VII.

THE REPORT BY THE COMMITTEE OF THE BOARD OF EDUCATION OF THE CITY OF NEW YORK.

The report on "Manual Training in the Common Schools,"* by the New York Committee, having been received, is here quoted; as was promised in a foot note on page 146, of this volume. A brief summary of the contents of the report was there given. The report proper is now given in full.

"*REPORT.*

In Board of Education. June 29th. 1887.

To the Board of Education:

The Committee on Course of Study, to which was referred the subject of the introduction of manual training into our Common Schools, respectfully report—

That they have given to the matter the careful, deliberate and extended consideration and investigation which its importance demands.

Inquiry into its origin and development in Russia, Germany, France, England and other foreign countries, shows that its leading purpose in Europe is to foster industrial skill, and to produce specialists—artisans—in order to advance the interests which these manufacturing nations have in domestic and foreign trade. Only incidental reference is had in most cases to its general educational, disciplinary and intellectual relations.

It also appears that the department of education now generally known as manual training was introduced into this country by certain broad-minded, practical educators, to whom its educational possibilities presented themselves as its chief claim for adoption. The disciplinary effects of proper instruction in the various departments of drawing, independent of its merely utilitarian aspects, were already well understood and appreciated. It was seen that, as drawing, free-hand and mechanical, is an inseparable part—indeed, the very basis of the whole system of manual training—to reproduce the pictured object in material was only carrying out and applying in a much more thorough and complete way the very principle and discipline involved in the drawing itself.

Under the lead and example of the educators referred to, much of the detail of the plans and purposes of the European system has been judiciously modified, and the subject made more fit to be incorporated into our system of popular instruction.

MANUAL TRAINING ALREADY ADOPTED BY SEVERAL AMERICAN CITIES.

Boston, St. Louis, New York, Chicago, Philadelphia, Baltimore, and several other cities of less population, but not of less intelligent zeal for education, have already made it a part of their educational facilities, either by establishing special corporate schools, or by adding it to the course pursued at already existing institutions, of which some are corporate and others the higher parts of local common school systems. Our own College of the City of New York, for example, has adopted the shop and laboratory as parts of the course of instruction, but with such modifications and additions as to bring them into closer accordance with the requirements of a great commercial as well as manufacturing community.

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* "Manual Training in the Common Schools. Report of the Committee on Course of Study and School Books of the Board of Education of the City of New York. New York: Hall of the Board of Education, 146 Grand, corner of Elm Street, 1887. Pp. 56."

It has long been a matter of deep regret and even of apprehension, that a large proportion of our young people are growing up with a positive distaste for manual labor. With an ever increasing number almost any other form of occupation is preferred.

On the other hand, the introduction of manual training in some one or more of its various forms into many of the schools and higher educational institutions of the country, has already begun to exert an influence towards bringing about a better state of things. It cannot be doubted that this result must become more and more manifest when this training in suitably modified forms, becomes the common possession of schools and pupils of every grade.

As yet these advantages are afforded only to a few: only to the members of classes in high schools and colleges, or, in some instances, to the highest grade of the Grammar School. Little, therefore, has been done for the great body of our young people, of whom not more than ten per cent. ever reach the advanced grades.

These pupils need the advantages of such a training, but are forced by circumstances to leave school years before their more favored associates. In some cities, it is true, much good work is done in the form of voluntary exercises by the children at home in the construction of miscellaneous objects. Important as this expedient unquestionably is, it cannot be made to take the place or produce the results of regular and graded work in the school room.

This question of what shall be done for all pupils, boys and girls, is the most important one involved in the consideration of manual training as a part of common school instruction. It has received the attention of many of our most eminent educators, and the practical results of their careful study and experience are substantially embodied in this report.

The general features of the plan may be readily understood. Many years ago the kindergarten of Froebel was introduced into this country. Like manual training, it is one of those new and fresh conceptions of true education which must, from time to time, continue to arise with the advance of our knowledge of those scientific principles which underlie all education. It has attained a well deserved popularity, and in many of our cities thousands of little children are enjoying its advantages. Although of widely different origin and purpose, its close pedagogical relations to manual training, and the identity of their fundamental principles, become upon investigation at once apparent. It is now seen that neither the kindergarten nor manual training has yet reached its full and proper extension and development, and that the wide gap at present existing between the kindergarten and the high school may be readily filled by extending the methods of the one upward through the Primary School and the method of the other downward through the several grades of the Grammar School. This will be but a safe and proper application of that fundamental principle which should underlie and unify the whole course namely, the development of certain faculties and aptitudes by the cultivation of the sense perceptions, to insure correct conceptions of form, and to test and manifest their accuracy by embodiment in material.

CONCLUSIONS REACHED.

From a consideration of all the facts and arguments presented, your Committee have come to the following conclusions:

1st. That the introduction of what is generally known as manual training would be an improvement to our present course of study. We are far from considering our schools a failure, and have no sympathy with those who attribute many of the evils of society to the existing system of public education; on the contrary, we are so convinced of the beneficial results of the system, that we think the greatest care should be taken, lest in trying to improve it we really injure it. But healthy life is inseparable from growth and change.

Our schools of to-day compared, or rather contrasted, with those of forty years ago, show notable progress in the adoption of more perfect methods. These are less memorizing, a more humane discipline, and a cultivation of the æsthetic capabilities and of self-control. But the fact that great improvement has been made points clearly to the possibility of still further improvement.

Instruction in drawing and the introduction of object-teaching have proved of the greatest advantage, and these studies lead directly and naturally to those subjects and methods now under discussion. In fact, they are but examples of these methods, and their success warrants further steps in the same direction. Public opinion, too, seems to be sufficiently in favor of such steps to warrant their adoption with the expectation of that general consent, without which no great change should be made in a public school system. It has come to be generally recognized as true that a certain amount of *work*, some application of mental power through the bodily powers, some production of physical results of thought and intention, implying the training of the senses, especially through the hand and the eye, is needed to produce a well-trained mind.

"MANUAL TRAINING" A GENERAL NOT A SPECIAL TRAINING.

2d. That manual training is admissible into our schools only as a means of general, and not of special education. The industries of this metropolis are too diverse, the sentiment of equality is too strong, the ambition to rise is too general to allow of any scheme that would designate certain pupils for particular walks in life. Rather must we seek, if we use new methods, to get by means of them better results of a general nature, better trained and disciplined minds, and greater aptitudes and powers for living and doing in whatever may be the pupil's future career. Such results can be secured only by a well balanced general education.

THE TRUE SCOPE AND PROVINCE OF MANUAL TRAINING.

3d. That notwithstanding the misdirection of some of the efforts heretofore made in manual training, there are certain manual operations which time and experience have sufficiently tested to demonstrate their usefulness and their availability. These operations have the following characteristics:

They are such as to lead the pupil to acquire correct conceptions of form through the careful and systematic discipline of his sense perceptions, and to require, as a test of the accuracy of these conceptions, their correct manual embodiment in material; and further, to give a practical knowledge of natural laws and of the qualities of materials.

They are within the scope of the faculties of all children whose minds and bodies are in a normal condition.

Their results are of general if not of universal utility, as personal acquirements apart from the educational value of the process.

They are comparatively inexpensive, and their introduction will require but little room.

They can be readily taught with but moderate addition to our present force of teachers.

For such instruction the following, which are not included in our present course of study, seem eminently suitable, viz:

Carpenter work, or the use of wood-working tools, for boys.

Modeling in clay, for boys and girls.

Construction work, in paper, pasteboard, and other suitable material, for boys and girls.

Drawing to scale, for boys and girls.

Sewing, for girls.

Cooking, for girls.

By judicious modification and extension, the well established methods of the kindergarten may readily be made available for the Primary and lowest Grammar School grades, so as to form, with the subjects already suggested, a complete and continuous course.

4th. That training in these branches, if adopted, should not be for a few selected hundreds of school children, but should be made an essential part of the authorized course of study for all.

5th. That the regularity and continuity of school work should not be interrupted by sending out pupils for instruction elsewhere than in the school building to which they belong; that the proposed new branches should be taught in the regular Grammar and Primary School buildings, and that neither detached workshops nor any new form of schools, technical, art or other, should be organized.

REARRANGEMENT OF SCHOOL SCHEDULES TO ECONOMISE TIME.

6th. That the length of the school sessions should not be extended beyond the present limit.

Your committee have given careful consideration to the important question, how to find the time necessary for these exercises. From the long experience that has been had of the demands and the working of the present course of study, as given in its details in the Teachers' Manual, it is evident that sufficient time may be obtained for the new exercises in the Grammar Schools by rejecting certain of the present details of some of the subjects and by simplifying the methods of instruction pursued in others.

The time in the Grammar Schools can be obtained by a careful and detailed revision of the present course of study, so as to reduce by at least an equal amount the work now required of these classes. The chief excisions will be made from the studies of geography, history and arithmetic in all of the grades. It is proposed that the study of geography be omitted from Grades 1 and 2, and the study of history from Grade 1. It is further proposed that the studies of history and of descriptive geography, in those classes in which these studies shall continue to be a part of the course, shall be in the form of reading lessons, and that at least a part of the time given to them shall be taken from that now given to other kinds of reading. As a yet further improvement, as well as a gain of time, much of the merely local geography now taught in some of the grades should be omitted altogether. Of these omissions, the names of commercially unimportant rivers and of certain mountain ranges and capes in South America, and more especially in Asia, Africa and Oceanica may be taken as types and instances.

The time required in the Primary Schools can be gained, partly by consolidating into one subject several matters now treated separately, and partly by a change in the method of instruction through the use of the exercises herein proposed.

THE INTRODUCTION OF THE NEW STUDIES MUST BE GRADUAL.

7th. That provision must be made for suspending the introduction of some of the proposed work in certain schools. The carpenter work and the cooking will require the setting apart of a room for each purpose. This, in some schools, it would be impossible to do at once. In such cases, therefore, those parts of the full course would have to be deferred till additional school accommodation shall make available room required.

It would probably not be possible in the first year to introduce the kitchen and workshop into more than one-third of the Grammar School departments.

RESOLUTIONS ADOPTED.

Your Committee during their deliberations have adopted the following resolutions:

Resolved, That the kind of instruction known as manual training should be introduced into the Primary and the Grammar Schools, and that separate schools for that purpose should not be established.

Resolved, That, for the Primary Schools, the instruction in manual training to be added, should consist in the construction, by the use of splints, wire, thread, paper, pasteboard and clay, of the forms now prescribed in the course for drawing.

Resolved, That in the Grammar Schools, the drawing should be modified so as to include drawing to scale, and corresponding constructive work should be added.

Resolved, That in the Girls' Grammar Schools, sewing should be taught from the Eighth to the Fourth Grades (inclusive).

Resolved, That in the Girls' Grammar Schools, cooking should be taught in the Third and Second Grades.

Resolved, That in the Boys' Grammar Schools, workshop instruction should be given from the Fifth to the First Grades (inclusive). That, while wood turning and some metal work are essential to complete elementary workshop instruction, the principal benefits of such instruction may be obtained through carpenter work and joinery alone, which, on account of the room required, are all that should be undertaken at present.

Resolved, That instruction in cooking and in workshop should be suspended as to each school until a suitable room is provided through the action of the Trustees.

Resolved, That the instruction in workshop, cooking and sewing should be under the direction of special teachers, who should be licensed, employed and paid in the manner now provided for special teachers.

Resolved, That to secure efficient instruction, an additional Assistant Superintendent should be appointed, whose special duty should be to supervise, under the City Superintendent, all the work in manual training in the Primary and Grammar Schools.

INNOVATIONS CONSIDERED.

It has been discussed during the deliberations of the Committee on Course of Studies, etc., whether or not it might be advisable to alter entirely the mode of teaching in our Grammar Schools, by having certain teachers designated not only of manual and industrial training, but of arithmetic, history, etc., that is to say, there might be special teachers of kindred subjects of study, namely, a special teacher of arithmetic and geometry; a special teacher of reading, spelling and composition, and a special teacher of history and geography, as well as a special teacher of drawing and manual training; so that instead of having one teacher teach all the subjects in one class, the different classes could pass in turn to the different special teachers. If this plan were adopted the teacher of manual training would in each Grammar School take his or her place on the staff of the school instructors, and thereby eventually save the city a considerable sum of money. Of course, in the beginning of the manual training work the teachers of that study would be additions to the present staff, as it is not intended to remove any of the present teachers, but as vacancies occurred, the manual training teachers could be appointed to fill such vacancies. It must not be forgotten that this proposed new system would cause an entire revolution in the existing system, and while some of the committee would favor such a change, others are indisposed to adopt such extreme measures, and therefore the committee has decided merely to lay these views before the Board for its consideration.

Appended to this report will be found:

A. A detailed statement of the estimated expense of introducing and maintaining manual training in all of the Primary and Grammar Schools of the city for the first year.

B. The estimated expense of the maintenance of manual training in all of the schools in the next succeeding years.

C. The estimated expense of introducing manual training, except workshop and cooking, as recommended, into all of the schools, and those two excepted subjects into *one-third* of the Grammar Schools and the maintenance for the first year.

D. Estimated expense in the next succeeding years of maintaining manual training, except workshop and cooking, in *one-third* of the Grammar Schools.

The detailed reports upon the Manual Training, Art and Trade Schools in the City of New York and its vicinity. Also, a detailed report upon similar schools in other cities. These several reports are also condensed, simplified and unified by a brief supplementary summary.

The Committee on Course of Study submit the following resolution:

Resolved, That the recommendations of the Committee on Course of Study, as presented in the foregoing report and in the resolutions adopted by the committee, be adopted as the sense of this Board, and that the committee be authorized to prepare and submit to the Board the details of the plan necessary for carrying the same into effect.

Respectfully submitted,

CHAS. L. HOLT,
DE WITT J. SELIGMAN,
GRACE H. DODGE,
WILLIAM WOOD,
Committee on Course of Study and School Books."

Three appendices follow; the first, containing estimates of expense, quoted from on page 146 of this volume; the second, giving a synoptical statement of prepared programmes for the different grades; the third, being notes of visits paid to various institutions and schools in New York City and vicinity, with brief descriptions of similar institutions in other towns and cities. As these institutions are fully described in the present Report, these brief statements are here omitted and only the final pages of the report containing the statistical summary given.

SUMMARY.

1. Cities visited—Philadelphia, Baltimore, Pittsburgh, Columbus, Cincinnati, St. Louis, Chicago, Ann Arbor, Toledo, Cleveland, Boston, New York and Montclair.
2. Cities not visited where manual training is given in connection with public education—Milford, Mass.; New Haven; State Normal School, New Britain, Conn.; Omaha; Eau Claire, Wis.; Moline, Peru, Cook County Normal School, Normal Park, Ill.; Barnesville, O.; San Francisco, Cal.
3. Higher institutions where manual training in some form or degree is a part of the course of instruction—Numerous Colleges and Universities, "State," "Agricultural" and "Mechanical."
4. Instruction in manual training, from Kindergarten to High School inclusive—Only in Philadelphia, where this is in part true through Mr. Tadd's "Industrial and Art School," with its 600 Grammar School pupils; and in Montclair, N. J.
5. In other places this instruction is confined to the High School grades.

6. Drawing in one or more of its forms, free-hand, mechanical, perspective, architectural or engineering is universal, but though a part of and the indispensable basis and accompaniment of manual training, is not considered in this report as manual training when not combined with some form of shopwork. But "Line-work" is always made the basis of work in material, such as paper, clay, etc., even in Primary and Grammar Schools.

7. In the High School Grades the ages run from 14 to 16 years.

8. In Philadelphia and Chicago, and especially in St. Louis, Kindergartens are very prominent.

9. In all of the advanced schools the course of instruction consists of drawing, wood-work (carpentry, carving and turning), pattern making, foundry work and bench work in metal (chipping, filing, soldering, brazing), and lathe work in metal, usually finishing with some kind of machine.

10. Tools—From the first the pupil is trained and obliged to keep his own tools in order, the saws sometimes excepted.

11. Cost of materials—In this matter it was found difficult, frequently impossible, to get definite statements. In all cases, however, it was stated that the amount is quite light.

12. The Cost of Plant—This has been very various; is frequently mixed with that of the building. A few cases where it was separately procurable are reported.

13. Teachers—How or whence obtained: Two of the Principals or Directors are engineers in the U. S. Navy, several are graduates from the shops of St. Louis, Ann Arbor and other similar schools. Their subordinates are mostly skilled mechanics from local workshops.

14. Their Compensation.—Definite answers only in part obtained. Enough to form a correct idea will be found under head of the several cities.

15. Changes in Study found necessary.—The most marked and definite case is that of the new High School in Philadelphia, and the similar school in Baltimore. In all other cases the hours of manual training and the study or review hours were adjusted to each other.

16. Effects on Proficiency in other branches.—The concurrent testimony of all Superintendents, and of a number of Grammar and High School teachers, is that no appreciable difference, either one way or the other, has yet been observed. I took great pains to make this inquiry wherever practicable. Dr. White, late president of Purdue University, and now Superintendent of Cincinnati, says that his experience at La Fayette convinced him that those who took the manual training course were better students in languages, mathematics and physics.

17. Effects on Character.—It is as yet too early to speak with absolute certainty on this point, but all indications are favorable.

18. What for Girls?—Sewing, only in Boston (other New England towns), Philadelphia and Toledo; cooking, at Boston and Toledo; phonography, type-writing, telegraphy, nowhere; girls work at carpentry in Toledo; at carving in Philadelphia and Toledo; at clay modeling in the St. Louis Normal Schools, and at drawing everywhere.

19. Omitting Kindergartens, drawing and home-made wood-work, etc., the part of the average school attendance participating in the workshop department of the manual training exercises is as follows:

Boston, 200 out of 50,000 average attendance.
Philadelphia, 1,200 out of 100,000 average attendance.
Baltimore, 180 out of 35,000 average attendance.
Pittsburgh, 0 out of 20,000 average attendance.
Columbus, 0 out of 8,000 average attendance.
Cincinnati, 0 (975, all private) out of 29,000 average attendance.
St. Louis, 0 (223, all private) out of 39,000 average attendance.
Chicago, 72 (200, all private).
Ann Arbor, 0 (150, University) out of 1,000 average attendance.
Toledo, 270 out of 7,000 average attendance.
Cleveland, 0 (75, private) out of 24,000 average attendance.

"*Ordered*, That the report and the appendices be entered in full in the minutes, and that five hundred copies be printed as a document of the Board."

The Board of Education after receiving this report appropriated $15,000 to enable the Superintendent to have the experiments begun in a few schools; having decided to move with great caution before committing the city to the greatly increased expense which must follow the introduction of Industrial Education and Manual Training in all the Public Schools.

VIII.

CRITICISMS OF THE ACTION OF THE NEW YORK CITY BOARD OF EDUCATION REVIEWED.

In this connection the following article by Dr. Butler, which appeared in the April, 1888, number of The Teacher,—a monthly Educational Journal published in New York City,—in which both the stock criticisms and objections against manual training, and the arguments in favor of the new study, are concisely stated, will be found of interest.

THE ARGUMENT AGAINST MANUAL TRAINING.

By Nicholas Murray Butler, Ph. D.,

President of the College for the Training of Teachers, N. Y. City; Lecturer on the History and Institutes of Education in Columbia College.

The newspaper comments which have been made upon the recent action of the New York City Board of Education in relation to manual training, are exceedingly unsatisfactory. It will be remembered that the subject of manual training was referred by the Board to a committee more than a year ago. After long investigation and careful deliberation, the Committee in June last presented an able and comprehensive report favoring on strictly educational grounds the introduction of manual training in the public school curriculum. After considerable discussion, the Board of Education adopted the suggestion of the report in principle, and provided for their being carried into effect in six schools for boys and in six schools for girls.

CRITICS CRITICISED.

In view of the amount of time and study that the Committee had devoted to the matter it was disheartening to find one of the leading city newspapers—and that one the one which of all of them has the highest reputation for its fair and intelligent treatment of literary and educational matters—making this statement: "This [the action of the Board of Education] is only an experiment and one of doubtful expediency. The importance of training the hand and eye as well as the brain is generally appreciated, but are not the pupils of the public schools already worked close up to the limit of their endurance? Train the hand and the eye if you will, but in special art or industrial schools."

These objections, it will be observed, have, if sustained, general and not merely local application. It is therefore essential that they be examined somewhat carefully. I will devote a few words to each of them. In the first place, the introduction of manual training is not an experiment, and it is not of doubtful expediency. From 1868, when Mr. Victor Della Vos, director of the Imperial Technical School of Moscow, worked out practically the educational ideas that had been given to the world by Rousseau, Pestalozzi and Froebel, until about 1880, manual training may fairly be said to have been an experiment. But several years since, especially in this country, it passed beyond that stage and became an established educational fact. In introducing it into the city of New York the Board of Education is following merely, not leading. In some twenty-five states and territories, manual training in some form or other is now established, and more than a score of the principal cities of the country are adopting it as rapidly as the means at their command will admit.

MANUAL TRAINING SCHOOLS SHOULD BE PUBLIC SCHOOLS.

It has been usual with us in this country to establish manual training schools outside of the regular public school course in order to show to the citizens of the various communities just what manual training implies, and just what sort of effect it will produce. The projectors of all these institutions, however, regard them as entering wedges and as destined to lead the way to the introduction of graded manual training in the public school course from the lowest primary grade, where the children are received from the kindergarten, to the highest class in the high school or academy. Space will not permit me to quote at sufficient length from the reports of the many manual training schools of the country to answer in the negative the question as to whether this training is of doubtful expediency. Those who are skeptical on this point are referred to the reports issued from Philadelphia, Chicago, St. Louis, Toledo, and other cities, and to the results of the investigations made by the school boards of St. Paul, Detroit, Springfield, Albany, and Newburg. The reading of these documents ought to convince any one that the expediency of manual training is no longer doubtful in the minds of those persons who have seen the most of it.

THE PLEA OF OVER WORK CONSIDERED.

The second objection is that the pupils of the public schools are already worked up to the limit of their endurance, and on that account no addition can be made to the course of study. This misses entirely the point of the argument in favor of manual training. That argument holds that the present course of study, while it takes up the time of the pupil, does not train all the pupil's faculties; that it is one-sided, narrow, and incomplete. The argument in favor of manual training points to the fact that man's mental powers are divisible into the receptive and the expressive. It thus points out that the present course of study devotes itself for fully ninety per cent of the time to the receptive faculties, and allots but the meagre remainder to a not always efficient training of the expressive faculties. Manual training, on the contrary, appeals to these expressive faculties, and it therefore claims a place in the public school course side by side with the studies that train and develop the receptive faculties.

No idea or fact is fully comprehended by the pupil until it is made his own and until he can use it and express it. It would not be very difficult for a child to memorize fifty pages of geometry and obtain an exceedingly high mark for an examination in the subject, and yet remain in almost total ignorance of the subject dealt with. Such knowledge would be imitation or parrot-like. It would be forgotten quite as rapidly as it was learned and far more effectually. Had the child, however, been taught to express his geometrical knowledge by drawing the figures or objects discussed and by constructing them in some readily handled material, his knowledge would have become real and useful. This illustration might be extended to other school subjects.

Observe further that this exercise in representation and construction, besides the direct effect which I have just pointed out, has also a most powerful and healthful influence in training the pupil's observation. An object which is incorrectly observed cannot be correctly represented, and the constant reference which must be made during the process of construction to the object itself—not to some one's account of it—is the best possible training in observation.

Again, suppose that a pupil obtains a mark of 95 in a scale of 100, in a grammar lesson. That seems both to the parents and to the pupil, eminently satisfactory, although it is not quite perfect. When, on the other hand, the same child comes to construct a lap-joint in wood, it is absolutely necessary for him to obtain a degree of correctness that is represented by 100. A lap-joint that is only 95 per cent of true will not fit. It must be perfect or the work will not be acceptable to the pupil or accepted by the teacher. The train of thought which this thought suggests is apparent.

FALLACY OF OBJECTION TO INDUSTRIAL TRAINING IN PUBLIC SCHOOLS.

The third criticism advanced is that the hand and eye should be trained in special art or industrial schools, and not in the regular school course. But why make this distinction between the senses? On what ground is the sense of hearing to be preferred to those of sight and touch? On what grounds is the most difficult and abstract means of expession known, namely that by the use of language, preferred to the simpler and easier methods of expression by representation and construction? Why shall the public school continue to teach in the writing class, the child to draw signs of sounds, and not teach him to draw things themselves without any intermediary sign?

The fallacy that the training of the hand and eye is non-mental training is, I will admit, a general and deep-seated one; but nevertheless it must be refuted before any intelligent comprehension of what is meant by manual training is possible. Let us suppose the most perfect eye ever known, and grant that in connection with it is an optic nerve that is perfectly healthy. Apart from the mind that works through them and by them, of what avail are they? What can they see? What possible knowledge can they communicate? We must all come to see that no oligarchy of the senses is possible or permissible. Certain senses are of more importance to us than others, because they bring us more definite and more varied kinds of knowledge. But for all that no one sense is in any way superior in quality to its fellows, and there is no sound reason to be found by the study either of psychological or educational science, for the exclusion of any of the mental powers from that course of training to which they all are entitled and which is necessary to produce the cultivated and well-grounded man.

MANUAL TRAINING URGED FOR ITS EDUCATIONAL VALUE ONLY.

Another argument frequently advanced by the opponents of manual training is that it is not the province of the public school to teach trades. I accept this statement and will add something to it. It would be eminently improper for any Board of Education to spend the public funds for the purpose of educating young apprentices whether in carpentry, in drawing, or in sewing, in the public schools. But manual training is not preparation for trades. It is purely and simply educational, and only because it is so can it demand recognition in the public schools. To be sure, the boy who has had a course in manual training will make a better carpenter and a better draughtsman than he who has not had such training. But let it be remembered that he will also make a better lawyer, a better physician, a better clergyman, a better teacher, a better merchant, should he prefer any one of these callings in life; and all for the same reason, namely, that he is better educated and better trained than the average public school graduate of to-day, because all of his mental powers have been called into play by carefully graded instruction.

The question as to how the necessary time for instruction in manual training shall be found, is one for the superintendents and principals to answer. They know that time is now wasted because of poor methods of teaching and ill-arranged courses of study. General Francis A. Walker's recent criticism of the teaching of arithmetic now in vogue, is familiar to all readers of THE TEACHER. We all know, too, that geography can be better taught, and that history and spelling can be taught in conjunction with reading and writing respectively, instead of separately and wastefully as now. By recasting the present curriculum to accord with these considerations ample time will be found for manual training.

COURSE OF THE NEW YORK CITY BOARD OF EDUCATION APPROVED.

The Board of Education of New York City deserves not the criticism, but the approval and support of the citizens of the Metropolis and educators everywhere, for its recent action. It has decided to introduce manual training in an economical, safe, and judicious way. It has not involved itself in some vast scheme which would be not only beyond its means, but, at this stage of local preparation for manual training, beyond its powers of organization and administration. The wisdom of the Board's action, if not fully understood and appreciated now, will be before many months have passed."

IX.

THE STATUS OF "THE MANUAL TRAINING MOVEMENT" AS SHOWN BY RECENT OFFICIAL REPORTS. 1888-1889.

INTRODUCTION.

The Manual Training phase of education, as distinct from the movements for special education in Science, in Technical Training, and in Industrial Art Drawing, is of very recent origin; yet, young as it is, it is divided into two distinct eras. In the first, it was a specialty—to be taught to a particular class of pupils in special institutions.

Ex-President Runkle, of the Massachusetts School of Technology, and Professor Woodward, of the Washington University, St. Louis, were the apostles of this new gospel of "Manual Training."

Soon the movement for popularizing the new method was taken up by the public school educators, and the distinguished Superintendent of Maryland, Professor M. A. Newell, in his inaugural address as President of the National Education Association at Louisville in 1877, took for his topic "Education and Labor," and first spoke the words which, in 1884, resulted in the action by the School Board of Baltimore, in opening a Manual Training School as one of the regular schools of the city. How this example has been followed in other cities and towns, has been told at length in the preceding pages of this volume.

The early chapters of this volume record, also, the first movements in Boston as long ago as 1871, towards some elementary training in schools as seen in the Whittling School, and later, in the Dwight Public School. It seems more than probable, that these movements in Boston and in other Massachusetts towns, were stimulated by the interest taken in the coming of Walter Smith in 1870, and the beginning of the teaching of Industrial Art Drawing in schools.

It is certain, that the exhibition of the articles made in the Russian schools which were shown at the Centennial, gave the main impulse to the very general interest in Manual Training Schools throughout the United States. It will be seen by reference to the present volume, that there has been great activity and development since the issue of Part I. of this Report. The fact that the first two hundred pages of this volume were in stereotype plates, nearly three years before these words are written, will readily explain some incongruities in this volume, which, owing to this delay, is in itself, an "object lesson" of the evolutionary development of this movement.

Like all similar movements in organized bodies, the new methods proposed, have led to general and earnest discussion on the part of educators; and this discussion has taken on many phases. Under the trenchant criticism of experienced educators not easily won to adopt new and unproved methods, the advocates of the new industrial features have somewhat frequently changed their positions; and the arguments now advanced by the leading advocates of the new education, conform more closely to long accepted principles of pedagogy than did the sometime excited utterances of eager enthusiasts, who had been interested in the novelty of the proposed methods, and convinced of their perfection and superiority to all other teaching, by the success of selected boys in a special Manual Training School.

The movement has broadened and deepened under discussion, and to-day, comprises far more than a mere question of adding to the school system, a single new class of schools for High School pupils.

The literature of the movement, is, as yet, confined to a few bound volumes, and is mostly to be found in scattered addresses, reported discussions, pamphlets, magazine articles, and in newspaper editorials and contributions. This very fact shows the vitality of the movement and the interest felt in it by the people.

Ex-Judge Arthur MacArthur, of Washington, D. C., published in 1884, a work on Industrial Education,* which comprised a general view of the subject, beginning with a brief statement as to the technical and artistic industrial schools in Europe, and then taking up the conditions in the United States, emphasizing the value of general and thorough training in drawing and proceeding to show what had been attempted in the way of introducing manual training. This volume gives an excellent summary of the situation at the time it was issued.

In 1886, Mr. Charles H. Ham, of Chicago, apparently incited thereto by his interest in the successful development of the Chicago Manual Training School under the direction of Mr. H. H. Belfield, put forward an enthusiastic plea for manual training,† which begins with an account of the Chicago school, and ends with a brief "history of the manual element in education." The very title of the book furnishes a good indication of the attitude of the author's mind towards his subject, while the titles of some of the chapters, such as "The Carpenter's Laboratory," "The Forging Laboratory," etc., show that the educational idea predominates. A book written on any subject with the perfect faith and earnestness evinced by this writer, could hardly fail of interest. In several historical chapters on "Education and the Social Problem," Mr. Ham draws from the history of past ages, the conclusion that our present system of education is a heritage of evil; and that the new gospel of manual training offers the only hope of the race. This volume furnishes in itself, a characteristic example of the enthusiasm of the early advocates of the new methods in education. These two volumes, neither of whose authors are professional educators, are evidently written for the purpose of awakening an intelligent interest in this subject, rather than as authorities for professional teachers. They still, in 1889, remain the best popular works on this subject.

The authoritative publications are, as yet, mostly to be looked for in Reports made by educational committees to school boards and State educational authorities. The present volume is largely compiled from such official and semi-official documents.

Among the most advanced and active of the later advocates of manual training, must be classed Dr. Nicholas Murray Butler, President of the New York Industrial Association, and of the New York College for the Training of Teachers. Dr. Butler is, also, besides being a lecturer in Columbia College, a member of the State Board of Education of New Jersey, and of the New Jersey "Council of Education." In these various capacities and relations, he has had occasion from time to time, as chairman or member of committees, to whom the topics were referred, to make reports on the subject of Manual Training in some of its phases. He is also a frequent writer on these themes, and a contributor to various educational publications, and, as we have shown elsewhere, a leading participant in the conventions and annual meetings of educators. As a teacher of psychology, and the head of the only college of pedagogy in the United States, he has given much attention to the new educational methods, and is an enthusiastic believer in the manual training movement.

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* Education in its relation to Manual Industry, by Arthur MacArthur. New York. Appleton & Co. 1884. Pp. 393.

† Manual Training the Solution of Social and Industrial Problems. By Charles H. Ham. New York. Harper and Brothers, Franklin Square. 1886. Ill. pp. 403.

As formulating the latest position of the most thoughtful advocates of the movement, the following brief statements from recent papers and "reports" by Dr. Butler, are quoted.

The first extracts here given are from a paper presented to the "twenty-sixth convocation of the University of the State of New York, in 1888." This was a careful presentation of the subject of "manual training as an element of public education." In the following passage, Dr. Butler, unlike some less thoughtful but equally enthusiastic advocates, recognizes the continuity of man's progress in the steps of his formal education, as well as in other matters. He says:

> It would be a gross error for those who attach themselves to a new educational movement to denounce preceding systems and conditions as misleading, worthless, bad. The most beautiful flower depends for its existence upon a clumsy and unattractive root. The flower loses its beauty and attractiveness if torn from the source of its life and strength. So it is with educational systems. The last makes the next possible, and the newest has quite enough to do without undertaking the profitless task of pointing out how all earlier systems would have failed had they been called upon to do something which in the nature of the case, it was not possible for them to be called upon to do. Growth is continuous. Each stage is necessary; and it is worse than useless to attempt to exalt any one at the expense of that which laid the basis for it. Each system and each theory of education may have been the best for its own time. It cannot fairly be judged by the standards of a later period. All of these points must be borne in mind in coming to the consideration of the question, shall manual training be given a place in the school curriculum? for that is the concrete form in which the latest development of educational thought presents itself to us.

He proceeds to speak of the confusion arising from the indiscriminate use of the terms "manual training" and "industrial training"—and "industrial education" and "technical education"—which confusion has been already commented upon in the earlier portion of this volume. Dr. Butler would have the term "industrial education" signify that which underlies all technical education, but thinks the term "industrial" was unfortunately selected, In reviewing the frequent changes in the aspects and development of this subject during the past few years, one is led to question whether the difficulty has not rather arisen from the fact that the scope of the movement has so rapidly broadened, that the word, originally applied to a very small part of what it is now called upon to sustain, has become overburdened?

It is very evident that those who set up "the whittling school;" or the few carpenter's benches in the basement of the Dwight School Building in Boston; or even the benevolent lady who in 1878 aided Superintendent Marvel to have lessons in carpentry given to a few boys in the public schools of Gloucester, Massachusetts, had no such comprehensive scheme and plan of a complete system of education as is now sought to be included in the term manual training.

Dr. Butler, however, finds high and noble ancestry for this educational bantling, which he shows is no parvenu, but a veritable scion of an historic and distinguished family, and that novel as are its methods, it is but a logical step in the Evolution of Education. He says:

> The Manual Training Movement as we know it, is new. It was put upon a strictly scientific basis, a very short time ago, indeed; but has been "in the air," as the saying is, for a long time. Over two hundred and fifty years ago, Comenius prescribed manual training as part of the true curriculum. The "Didactica Magna" contains specific directions concerning it. Locke, Rousseau, and Fichte, all emphasized manual training though for different reasons. Locke agreed with Comenius and regarded it chiefly from the standpoint of its value in practical life. Rousseau and Fichte, however, saw that its influence on the growth of the pupil, mental as well as physical, was to be desired. Froebel in his kindergarten, reduced theory to practice, and in the kindergarten, all manual training as well as all rational and systematic education has its basis. But Froebel's work did not include the development of a scheme of manual training for older pupils. This was furnished many years later, and from an unexpected quarter. M. Victor Della-Vos, director of the Imperial Technical School of Moscow, took the initiatory step. His report, made at the Expositions in Philadelphia in 1876, and in Paris in 1878, contains this passage: "In 1868, the school council considered it indispensable, in order to secure the systematic teaching of elementary practical work, to separate entirely the school workshops from the mechanical works, in which, the orders for private individuals are executed. By the separation alone of the school workshops from the mechanical works, the principal aim was, however, far from being attained. It was found necessary to work out such a method of teaching the elementary principles of mechanical art as, first, should demand the least possible length of time for their acquirement; secondly, should increase the facility of the supervision of the graded employment of pupils; thirdly, should impart to the study of practical work, the character of a sound systematic acquirement of knowledge; and fourthly, should facilitate the demonstration of the progress of every pupil at stated times.

He gives full credit to Ex-President Runkle and Dr. Woodward, for introducing this method of elementary technical training to Americans. He then avers, that the next step was the discovery that the kindergarten and the manual training school were the Alpha and the Omega of a complete educational scheme, and that the problem of how to connect them by the intermediate schools was at once recognized, and further, that when this need *was* recognized, the whole subject reached, *ipso facto*, a firm pedagogic basis.

This may be admitted, but it was a slower process than appears in such a statement, and it is hardly to be forgotten, how, step by step, the first enthusiasts were forced by sharp criticism, to leave untenable positions and to seek for some defensible stronghold. There is, undoubtedly, a place for all phases of a true educational method; and when this is recognized, all sound educators can meet on a common plane.

In placing this method on pedagogical grounds, and urging it upon these alone, Dr. Butler occupies a strong position; but it was not by any such professional arguments, that at first, the new studies were urged or popularized.

The following is Dr. Butler's statement of the present argument for the adoption of the new methods:

THE NEW MOVEMENT IN EDUCATION BASED ON PHYSIOLOGICAL DISCOVERIES.

It is hardly more than half a century since Sir Charles Bell discovered that the nerves which carry impulses out from the brain to the muscles are wholly distinct from those which carry stimuli into the brain.

For twenty-five years, researches have been making in cerebral and nervous physiology that have revolutionized mental science. The dependence of mind on body, the relation of the various mental powers to each other, and the importance of the distinction between the in-taking and the out-going powers of the brain are now recognized as they never were before. Naturally, we expect to see these scientific conclusions reflected in any course of study which is abreast of them. It is essential both in the powers of reception and in the powers of expression, that the child deal with things and objects, and not alone with what some one has said or written about things. Education from the Rennaisance until Pestalozzi, despite the protests of a Ratka or a Comenius, did not recognize this principle. It taught words; and words only. Rouseau, Pestalozzi, Froebel and the hundreds of humble teachers whom they inspired, burst these verbal bonds and inaugurated that training of the receptive powers, now almost universal, by which the pupil sees things, touches things, handles things, and is not held at arm's length by the interposition of words. This is the philosophy of the object-lesson and it is because of this sound, scientific reason for its existence, that it has become permanently established in the school room.

TRAINING OF THE EXPRESSIVE FACULTIES HAD BEEN LONG NEGLECTED.

While this wonderful improvement in the training of the receptive faculties was making, the active or expressive faculties were left to shift for themselves. When we examine the ordinary course of study with reference to this point we find that the powers of expression by delineation and construction are entirely overlooked. Reading and writing are the only studies in the traditional group that train expression, and they are wholly inadequate; and until very recently they were taught in such a way that they lost most of their disciplinary value. But even when well taught, they are not adequate to the full demands of the mental powers of expression, for they rarely occupy more than ten per cent of the school time, except in the very lowest primary grades. Furthermore, they must be supplemented in another direction if the active powers are to be trained as they should be. The advocates of manual training come forward and demonstrate that their scheme of instruction will adequately and properly train the powers of expression. The powers of expression by delineation and construction, are trained by the reciprocal instruction in drawing and in constructive work. It is proved, that the boy who can draw a cube or he who can carve or mould one from wood or clay, knows more that is worth knowing about the cube than he who can merely repeat its geometrical definition.

A REMODELING OF THE PRESENT CURRICULUM IS A NECESSITY.

Because of this psychological and practical soundness of manual training, the argument in its favor, calls for the remodeling of the present curriculum. Manual training can not be added as an appendix to any other course of study; it must enter on a plane with the rest. It is suggested that much time now wasted could be saved by better methods of teaching, that logical puzzles over which so much time is now spent be eliminated from arithmetic, that spelling be taught in conjunction with writing, and history in conjunction with reading. The time thus saved is to be appropriated in about equal parts to drawing and constructive work, both together to occupy from one-quarter to one-third of the pupil's time. Drawing lies at the basis of all manual training, and it is to be taught in every grade as a means of expression of thought, only incidentally as an art. The constructive work is in material adapted to the child's age and powers. It is at first in paper and paste board, then in clay, then in wood, and finally—in the academic grades—in metal. These means are, so far as our present experience goes, the best ones for the training desired. But under experience and deeper insight may alter or improve them at any time, just as our readers and spellers and our arithmetics have been improved.

The curriculum which includes manual training, in addition to meeting the demands of our present knowledge of the pupil's mind and its proper training, is better suited to prepare the child for life than that curriculum which does not include it. The school is to lay the foundation for intelligent citizenship, and as the conditions of intelligent citizenship change with the advance of civilization, the course of study must change in order to adapt itself to these new conditions.

DIFFERENT ERAS DEMAND DIFFERENT METHODS OF EDUCATION.

No one who can read the lessons of history will assert that the ideally educated man is always the same. Greek education sought beauty, mental and physical; Roman education sought power and eloquence; Monastic education sought asceticism and a soul dead to the world; Rennaisance education sought classical culture and minute acquaintance with the literatures of Greece and Rome; modern education broadened this conception of culture until it embraced the modern literatures and natural science; and common school education in the United States in these closing years of the nineteenth century, is broadening its ideal yet further, and is now demanding that the pupil be so trained that the great, busy life of which he is so soon to form a part, be not altogether strange to him when he enters it. It demands practicality. It demands reality. It demands that the observation, the judgment and the executive faculty be trained at school as well as the memory and the reason. Despite the fact that the three former are the most important faculties that the human mind possesses, it is astonishing how completely they are overlooked in the ordinary course of study.

From the rapid increase of urban population and the consequent lessening of former opportunities for home training in active, outdoor occupations, the increasing need for such training as is now proposed in schools is set forth:

At certain stages of civilization and national development, there is a natural training of the expressive or active powers which though desultory, is by no means ineffective. I refer to the training which is the result of an active out of door life, especially in rural districts. The country boy receives this training in the hundred and one small occupations about the farm, and the old-time mechanic's son obtained it in his father's shop. The conditions which once made this natural training available for a large proportion of the rising generation, are now altered and the alteration goes on year by year with increasing rapidity.

We must bear in mind the growth of large cities and our unprecedented commercial and industrial development. The specialization of labor has destroyed one of the above-mentioned possibilities and the growth of great cities is rapidly removing the other. When our first national census was taken in 1790, only one-thirtieth of our population lived in cities having more than 8,000 inhabitants and there were only six such cities in the country. Their total population was scarcely more than that of Albany to-day. At the present time, we have over 320 such cities and their inhabitants number almost thirty per cent. of our total population. This fact has a most important bearing on practical life, and thus on the public school. We must remember also, that between 1850 and 1880 our manufactured products increased in value 550 per cent. and the number of those employed in factories increased 325 per cent. This, when interpreted, means that indefinitely more people than ever before have to employ their observation, their judgment and their executive faculty, and employ them accurately in the performance of their daily duties. For them—and through them for all of us—the conditions of practical life have changed and are changing. Has the school responded to the new burdens thus laid upon it? The argument for manual training says no, it has not. A more comprehensive, a broader, a more practical training is necessary.

In the final pages of the paper, Dr. Butler thus sums up the success and progress of the movement in various places, and expresses his convictions of its significance and value.

Now I have no sympathy with the purely utilitarian conception of the school, with what we may call the dollars and cents idea of education. On the contrary, I cordially endorse the pungent aphorism of Dr. Munger: "Education is to teach us how to live, not how to make a living." But while standing firmly on that platform I do say, that if the best and most complete education happens to aid a boy in earning his living, that is no reason why it should be supplanted by something less thorough and less complete.

The movement which would place manual training in the school course has commended itself to the ablest and most thoughtful educators all over the world. I do not recall a single name of the first rank that is in opposition. Huxley and Magnus in England, Sluys in Belgium, Bréal and Salicis in France, Salomon in Sweden, Paulsen and Goetze in Germany, Hannak in Austria, Seidel in Switzerland, and Gabrielli and Borgna in Italy, are leading the thought of their respective countries on this subject. In Sweden, in France, in Germany and in the United States, professional schools for teachers, are expounding the philosophy of manual training and the methods of teaching it, together with their other subjects of instruction. More than two score of most progressive cities of this country—several of them are in this State—are placing manual training in their public schools as fast as the means at their command, will permit. Successful private schools in New York City, St. Paul, Louisville and elsewhere are doing the same thing. In twenty-five of our States and Territories, manual training of some kind is taught in some manner. No one who saw the magnificent exhibit of manual training work at the last meeting of the National Educational Association at Chicago, will ever forget it. It marked a progress and a thoroughness that were inspiring.

THE PROFOUND IMPORTANCE AND SIGNIFICANCE OF THIS MOVEMENT.

A movement at once so philosophical and so far reaching as that in favor of manual training, has not come into educational thought since Comenius burst the bonds of Mediævalism two and a half centuries ago. It is the educational question of the time. Other matters are important as affecting administration, organization, methods of teaching, and other details, all having to do with applications of principle; but the manual training movement is a principle itself. As might have been predicted, it meets with no little opposition and considerable misrepresentation. The forces of conservatism are arrayed against it as something new; and it is doubtless well that it is so. For education is altogether too important a matter to be swayed by any and every crude theory. Any new movement to establish itself in education, must run a gauntlet of opposition and criticism, the safe passage of which, is a guarantee of excellence. This gauntlet of manual training has successfully run and it is to-day, the newest phase of educational thought. In the first place it is a deduction from one increasingly complete and exact knowledge of mind, and in the second place, it meets the demands for a more practical education made by the conditions of contemporary life. It so happens, and happily, that the education which our increased scientific knowledge points us to as the best, is more practical, and in the best sense of that much abused word, than that which it supersedes.

On December 26, 1888, Dr. Butler, as chairman of a "special committee on manual training," made a report to the Council of Education of the State of New Jersey. This is an association of school superintendents, teachers and of educators. This report fills several pages, and is a plea for the broadening of the meaning given to the term "Manual Training" summing up as follows:

That delineation and construction are natural, early and simple modes of thought-expressions cannot be doubted, and needs no demonstration before this Council. That these modes of mental activity should be trained at school, where the sense-perception, the memory, the reasoning power and the verbal expression of thought are trained, also needs no demonstration. The statement must be accepted as true as soon as it is made; for the proposition that certain mental powers shall be intentionally omitted from the school-training, has not as yet found any conscious defenders, though numerous cases might be cited when men have unconsciously argued in support of it.

The powers of thought-expression by delineation and by construction are among the activities for which Froebel made so prominent a place in his Kindergarten. The principle underlying the Kindergarten and the Manual Training School is one and the same. It must be recognized and its application extended to the primary and grammar grades. Then we may speak of the Manual Training Movement, and mean something definite thereby; and we may still speak of the Manual Training School and mean a school which represents the principle of the Manual Training Movement in the instruction it offers to pupils of high-school age.

We urge upon the Council the determination to use the phrase in this sense. It is the sense which is warranted by educational history, and the only sense that views manual training as involving the application of a great pedagogic principle, and not as an attempt to improve the methods of high-school instruction alone. We therefore submit the following resolution and recommend its adoption:

"*Whereas*, there are several and conflicting uses of the term Manual Training, be it hereby

Resolved, That the New Jersey Council of Education defines Manual Training as training in thought-expression by other means than gesture and verbal language, in such a carefully graded course of study as shall also provide adequate training for the judgment and the executive faculty. This training will necessarily include drawing and constructive work, but experience alone can determine by what special means this instruction may best be given."

Respectfully submitted,

NICHOLAS MURRAY BUTLER,
Chairman.

December 26, 1888.

On February 7, 1889, the special committee on "Manual Training" appointed by the New Jersey State Board of Education made a report on manual training, having been appointed pursuant to resolution passed May 23, 1888, for the purpose of making "an investigation of the subject of Industrial Education, or Manual Training, and to recommend the best method or methods for the incorporation of manual training in the school system of the State, and to prepare a course of study on the same."

After emphasizing the necessity of distinguishing between the use of the term "Manual Training" by educators, or by trade teachers, they find that as a branch of common school instruction, it rests upon a sound theoretical basis by reason of the training offered by it to the mental faculties.

The fact that it first attracted attention at the Centennial in 1876 is recorded, and the statement is made that for ten years its progress was slow, but that since it has been placed upon a pedagogical basis it has rapidly extended. The following passages recite such action in regard to it as has been taken by the States, and concisely define the term.

LEGISLATIVE ACTION IN PENNSYLVANIA, NEW YORK, AND NEW JERSEY.

A Commission to investigate manual training, has been appointed by the Governor of Pennsylvania under the authority of the Legislature of that State, and will soon present a report. In Maryland, a similar Commission has been suggested and will probably be appointed in the near future. In New York, the Legislature has passed one or more acts favorable to manual training. In our own State the subject has received favorable consideration from two Legislatures. By an act approved April 28, 1887, it was provided that, "Whenever, in any school district in this State, there shall have been raised by special school tax or by subscription, or both, a sum of money not less than one thousand dollars for the establishment in such district of a school or schools for industrial education, or for the purpose of adding industrial education to the course of study now pursued in the school or schools of said district, there shall be appropriated by the State, out of the income of the school fund, an amount equal to that appropriated by the district as foresaid, etc." In 1888 this law was amended and the amount to be raised by the district in order to entitle it to an appropriation from the State, was reduced to five hundred dollars. This amendment has served to make it possible for some of the smaller and poorer districts to avail themselves of the benefits of the law. Already a number of school districts in the State have taken advantage of these laws, and others contemplate doing so. Montclair, Paterson, Vineland, Morristown, Orange, Elizabeth, and other places have already complied with the provisions of the law, and have received an appropriation from the State Fund in aid of manual training. It is now taught in those districts as a part of the public school curriculum. That it is abundantly successful cannot be questioned, for the testimony to its success is unanimous on the part of the teachers and school officers who have studied the principles on which it is based and watched its results.

THE TERM MANUAL TRAINING DEFINED.

It seems essential, that some brief description of what Manual Training includes be given. As we have already pointed out, it trains the judgment and the executive faculty as well as the powers of thought—expression by delineation or drawing, and by construction or making. This is, no doubt, a broad application of the term "Manual Training," but it is in our judgment the one which should be chosen and adhered to. Manual Training is occasionally used as signifying merely exercises in the use of tools employed in working wood and iron, and it is by reference to this use, that the Philadelphia, Chicago, and St. Louis Manual Training Schools are so called. But Manual Training has given its name to a great educational movement, one which recognizes the human activities and expressive powers and demands that they be trained and developed at school. It includes the Kindergarten, drawing and form study, constructive work in paper, clay, paste-board, wood and metal—these latter materials being varied to suit the pupil's age and powers, and also sewing and cooking. Some cities and some institutions have included a portion of these subjects in the school course, and some have made place for them all. The latter is the course which must be pursued sooner or later, and which should be continually kept in mind. The city schools will naturally be able to progress in this matter more rapidly than those in the country, but the latter can make a beginning by introducing sewing for girls, simple tool work for boys, as well as drawing and form study for all the pupils. The expense which this involves will be stated in an appendix to this report.

RECOMMENDATIONS.

The report closes as follows:

It seems to us desirable also, that the State Board of Education should lay down certain definite rules by which it will be guided in the future in approving or disapproving courses of study in manual training, which come before it in accordance with the provisions of Chapter 38, Laws of 1888, Section 1. In our opinion, this approval should be withheld whenever drawing and form study is not adequately represented in the proposed course of study. It should also be withheld unless drawing and form study is supplemented by constructive work of some sort or grade. This constructive work might be represented by Kindergarten or by clay work, wood-working, sewing or cooking. By establishing such a regulation as is here recommended, the intent of the law will be most efficiently carried out and the interests of the school be best served.

We append to this report an outline of a proper course of study in the manual training studies. It has been prepared with much labor, but is meant only as a suggestion to be adopted and improved upon; it is not a hard and fast rule to be complied with. An estimate of the expense necessary in certain cases is also appended.

All of which is respectfully submitted.

Nicholas Murray Butler, *Chairman.*
Andrew A. Smalley,
Cornelius Shepherd,
Charles W. Fuller.

On motion of Judge Randolph, the report was received and unanimously adopted as the sense of the Board.

On motion of Dr. Newell, the State Superintendent was directed to carry out the recommendations of the report.

It will be observed that emphasis is given to the necessity that the study of drawing be kept up. The following suggestions for practical use in the various grades of schools, show what Dr. Butler and his confréres would include under the term "Manual Training." No provision, it will be noticed, is made for training in metal work.

APPENDIX.

The following details of the various subjects of instruction included under the term Manual Training, are given in order to guide trustees, superintendents and teachers in outlining and organizing these studies.

SEWING.

Sewing in the lower primary grades should be arranged to supplement the various kindergarten occupations of sewing, cutting, folding and weaving, as well as prepare children between the ages of seven and nine for the more difficult kinds of sewing. During the earlier parts of the course, the child should be made acquainted with the materials to be used, by means of object lessons upon wool, cotton, linen, paper and its manufacture, weaving, steel and its manufacture, emery, needles and pins and their manufacture, etc. The child should also learn how to wear and use the thimble, the proper position to sit in while sewing, the measuring of the thread, threading the needle and making a knot. Also the proper use of the scissors.

Then will follow the various operations in sewing, as arranged and developed in courses of study already prepared. Sewing may profitably be taught twice a week, for thirty or forty minutes each period. It should be taught to girls in all the primary and grammar grades. The approximate cost of the equipment and material necessary to give two lessons in sewing a week throughout the school year to a class of forty pupils is $10.00.

COOKING.

Instruction in cooking may be begun in the lowest grammar grade. Instruction in cooking should be connected as much as possible with instruction in other subjects. In schools where natural science is taught, a particularly close connection can be established.

The instruction begins with the making and care of fires and the chemistry of combustion; then proceeds to the principles and practice of food preparation, by boiling, broiling, stewing, roasting, etc. The class room work should include talks on the chemistry of foods, the relative nutritive power of various foods, and questions of food economy, etc.

The instruction should be given twice a week, in lessons an hour in length, throughout the grammar grade. A room must be set apart and fitted up for this instruction. A class of twenty can be easily instructed at one time, and the cost of equipment for such a class is about $80. The materials used will cost on an average $1 per lesson.

DRAWING AND FORM STUDY.

Drawing is to be taught primarily as a mode for the expression of thought. It should always be based upon objects or models and never on copies or tracings. In the lower primary classes, the pupils should study the sphere, cube, and cylinder as typical forms. These are to be studied first as wholes. These forms should be modelled in clay by the pupils as also objects based on these solids. Paste board tablets can be used to illustrate the circle, square and oblong. These tablets may be arranged in various ways as an exercise in simple design. At this time, the pupil must be taught the correct position of the body in drawing and the proper method of holding the pencil. The exercises in movement are taught first by movement in the air, then by drawing on the blackboard and on paper from models and tablet arrangements.

The work in the higher primary and grammar grades is a development and extension of the preliminary work as above outlined. The connection of drawing with object lessons and with instruction in other branches is very close, and should be brought out in the teaching.

A sufficient stock of models, tablets, paper and pencils, to equip an entire school of four primary and, four grammar grades for a year's work in drawing, can be purchased for about $120.00. The major portion of this expense is for permanent equipment, and need not be renewed for many years. Clay for modelling, usually costs two cents per pound, and two hundred pounds will suffice for one school for a year; the same clay can be used over and over again.

Drawing and form study should occupy not less than one forty-minute period daily, throughout the school course.

WOOD WORKING.

Working in wood with carpenter's tools, is the form of constructive work generally approved and in use, for pupils of twelve years of age and upwards. A separate room must be provided for it. Thirty pupils may be taught at once, and fifteen double benches, costing about $15.00 each, are to be provided. The full equipment of necessary tools costs about $10.00 per set, or $300.00 for the thirty sets. $25.00 additional will provide such general tools and fixtures as are essential. These tools will last a number of years if properly cared for. The material used in the wood working classes is quite inexpensive and should not cost over $1.00 per pupil for the entire school year. Two lessons per week of an hour's duration each are desirable.

KINDERGARTEN.

This fundamental and all important branch of school work is very inexpensive. $60.00 will equip a Kindergarten for twenty-five children and the subsequent annual expense is very light. All children should spend the year before entering the primary school in the Kindergarten, and for some children, two years are necessary. The Kindergarten is now incorporated in the school systems of Philadelphia and Boston, and many of its methods have found application in primary instruction in Paterson and other places in this State.

With this concise compilation from the latest "reports" by Dr. Butler and others, it is believed that the advanced position of the advocates of manual training as promulgated in the year 1889 is fully and fairly presented.

Here this paper was, it was thought, definitely ended; but, as these proofs are received from the printer for the author's revision, the admirably printed volume of the Report made to the Legislature of Pennsylvania, by the Industrial Education Commission, comes to hand, through the courtesy of President George W. Atherton, of State College, the Chairman of the Commission.* This is the report referred to above by Dr. Butler, as soon to appear. It is received too late to permit of extended notice, even if the present volume did not already exceed desirable limits of size. It is, however, so comprehensive in its scope, and so valuable an addition to the accessible literature on this subject, that room is found for such extracts as will serve to show its origin, purpose, and character. This large octavo volume printed on calendered paper, with some sixty pages of illustrations, is a notable contribution to the literature of the new educational movement, and an unusually handsome example of official bookmaking.

An edition of ten thousand copies was ordered by the Legislature.

The report proper is comprised in twenty-four pages. It begins as follows:

To the Senate and House of Representatives of the Commonwealth of Pennsylvania:

The Commission appointed to make inquiry respecting the subject of Industrial Education, respectfully submits the following report:

The Legislature at its last session adopted the following concurrent resolution:

"*Resolved (if the House of Representatives concur)*, That the Governor is hereby authorized and requested to appoint a Commission consisting of not more than five persons, citizens of this Commonwealth, to make inquiry and report to the Legislature at its next session, by bill or otherwise, respecting the subject of industrial education, including an examination of the extent to which it is already carried on in Pennsylvania and elsewhere; the best means of promoting and maintaining it in its several grades, whether by State or local action alone, or by both combined; how far it is possible or desirable to incorporate it into the existing system of public instruction; the best method of training teachers for such schools or departments, and what changes, if any, are required in the existing system of normal schools to enable them to provide such training, or to meet more fully the needs of the system of public instruction as now organized in this State, with such other inquiries as the Commission may itself institute or be requested by the Governor to undertake. The members of the Commission shall serve without compensation, except for necessary expenses and clerk hire actually incurred and approved by the Governor."

This resolution was approved by his excellency the Governor, May 19, 1887, and the following gentlemen were subsequently "appointed to serve on the said Commission": George W. Atherton, LL. D., President of The Pennsylvania State College; A. H. Fetterolf, Ph. D., President of Girard College; Nathan C. Schaeffer, Ph. D., Kutztown, Pa.; George J. Luckey, Esq., Pittsburgh, Pa.; Colonel Theodore W. Bean, Norristown, Pa.

PLAN OF WORK ARRANGED.

The Commission held its first meeting in the Supreme Court chamber, Harrisburg, December 9, 1887, and organized by appointing George W. Atherton, chairman, and Samuel A. Boyle, clerk. After a consideration of the terms of the resolution, the following specific topics of inquiry were adopted as embodying its essential points:

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* Report of the Commission on Industrial Education made to the Legislature of Pennsylvania, with Appendices. Harrisburg: Edwin K. Myers, State Printer. 1889. Ill. Pp. 592.

1. To what extent in its several grades, and by what methods, industrial education is carried on outside of Pennsylvania as a branch of public education.

2. To what extent and by what methods it is now carried on in the several grades of public schools in Pennsylvania, and the practicability of introducing or extending it in such schools, city and rural.

3. (*a*) To what extent in its several grades, and by what methods it is now carried on in private institutions in Pennsylvania, with the relation of such work to other forms of education, to public charities and reformatories, to industrial development, and to the general interests of society.

(*b*) The best methods of enlarging and extending such work, having in view also the question of its more or less direct connection with existing public systems or agencies.

4. (*a*) The best means and methods of establishing and maintaining it in its several grades: Whether by State action, or by local action, or by both combined.

(*b*) How far it can be incorporated into the present school system of Pennsylvania, and what (if any) changes of law are necessary or desirable to that end.

5. The best methods of training suitable teachers.

(*a*) Changes (if any) required for this purpose in the present system of normal schools.

(*b*) Changes (if any) required to enable the normal schools to meet more fully the needs of the present public school system.

6. As to each of the foregoing topics:

How far the educational element should be incorporated into such training, as distinguished from the strictly trade, apprentice, or technical element.

In order to make the proposed investigation as thorough as possible in the several directions thus suggested, it was thought desirable to assign these special lines of inquiry to the different members of the Commission, the results in each case to be finally reviewed by the Commission as a whole.

THE CHAIRMAN REQUESTED TO VISIT EUROPE.

The following resolution was also adopted:

"*Resolved*, That the chairman be and hereby is authorized and requested, on behalf of the Commission (and as far as practicable) to visit such places and institutions in Europe as furnish the most systematic and successful instances of industrial education, as far as he may deem inquiries in that direction likely to aid the Commission in discharging the duties intrusted to it by the Commonwealth."

The individual members of the Commission have pursued the several lines of inquiry thus indicated, and the Commission, as a body, has met from time to time to compare views and to combine the results of investigation, continuing that procedure until shortly before the assembling of the present Legislature. They have singly or as a body visited many portions of our own State; have conferred with leading representatives of educational and business interests in Philadelphia, Pittsburgh, and elsewhere; have visited a few institutions in other States; and the chairman, at the request of the Commission and with the approval of the Governor, spent between two and three months in an investigation of the same subject in England, France and Belgium. Besides this, the members of the Commission have sought to make use of all available sources of information in the way of printed reports, discussions, treatises, etc., and, divesting themselves of all preconceived opinions which could interfere with the thoroughness and impartiality of their work, have diligently addressed themselves to the inquiries marked out for them by the resolution above quoted.

ESPECIAL PURPOSE OF THIS INVESTIGATION.

It should perhaps be said at the outset, that without neglecting other branches of inquiry, they have considered themselves especially charged with the question as stated, in the words of the resolution, "How far it is possible or desirable to incorporate it [industrial education] into the existing system of public instruction, and the best method of training teachers for such schools or departments." In order to reach definite results, they have endeavored to ascertain,

First. To what extent and with what results such instruction has been actually established as a part of public school education in the United States and elsewhere;

Second. Whether the introduction of such instruction in the public schools of this State is desirable; and,

Third. Whether, if desirable, it is also practicable.

In the appendices to the report will be found a large amount of material, embodying the results of such inquiry, showing to what extent industrial education has been successfully established in many places, at home and abroad, and presenting the views of eminent men in the various walks of life as to its general results. This material cannot profess to be more than a meagre selection from the great mass within reach. The difficulty has been not to find material enough, but to select from the profusion accessible, what seemed likely to prove the most useful portions. The guiding principle in this selection has been to present the results of actual experience in different branches of the work; and, in the hope of furnishing practical assistance to institutions and localities, a few courses and methods now in successful operation are given, with some statements of the expense involved. Theoretical views have been given weight only so far as they have proved the basis of sound experience.

The terms Industrial Education, Technical Education and Manual Training, are discussed at some length and defined.

The fact that Governments have long since established special institutions for the training of the higher and official classes, is noted, and the further fact of a recent notable movement towards "the diffusion of scientific and technical instruction among the masses of the people" in several European countries is recorded. The Royal Commission on Technical Instruction appointed by Great Britain in 1881, and the exhaustive report made by this Commission, are referred to; selections from this report being given in Appendix II.

The movement in the United States is then concisely summarized with quotations from various sources. The following suggestive and interesting view of the results of various systems of education occurs.

One of the most striking facts in the present industrial condition of nearly every European country, as well as the United States and several countries in South America, is the extensive employment of Germans in all positions requiring scientific and technical knowledge. It is, in a scientific and industrial sense, a veritable "Teutonic invasion," and it is the direct result of the long-continued, intelligent and unremitting efforts of the German governments to provide for their people the best possible technical instruction. But their general school system is still defective on the practical side. The English, the French and the people of the United States excel the Germans in mental aptitude and in adaptability to the varying requirements of circumstances. The educated German works on well considered and secure lines; but he works by routine. The Frenchman, the Englishman and the American follow a less vigorous method, but work with more facility, and adopt changes more easily. An interesting statement on this point is given in a private letter to a member of the Commission, from a gentleman who has resided several years in Europe, and has been a close observer of social and economic movements:

BONN, *November* 18, 1888.

Yesterday I went with one of the professors of national economy, with six or eight of his students, to visit a large establishment for the manufacture of pottery employing seven hundred hands and sending its wares in large quantities to both England and the United States. Its clays are brought from England and a large part of its wares are sent back to England—a nut for English free trade to crack by and by. The foreman or superintendent who was sent by the proprietor to accompany our party, is an Englishman, and he surprised me with the statement that the British technical education is better than the German, and that the German potteries and porcelain manufactories send to England for superintendents. I told him of the different opinion prevailing in London last winter. He replied he knew the British opinion, but said it is a mistake. The German polytechnic schools teach science, and their men excel the English in science, but they get no practice, and when they finish their studies at nineteen or twenty years of age they will not work, and are too old to begin at the bottom and learn the practice thoroughly. The English student is a workman who labors through the day and goes to the night classes of South Kensington or the City of London College or elsewhere, and masters the science at the same time he is learning the art. So when a practical superintendent is wanted the Englishman is sent for. Such he said was his own history. Whether it is true in other than pottery manufactures he did not say. The thing is worth considering. Per contra, the proprietor told us that the training of the boys and girls in drawing, etc., in the Volks-schule here gave him much cheaper decorators, of whom he employs two hundred, than the English get. Most of the English decorators and porcelain painters are artists requiring high wages: in this establishment we saw many boys and girls of fourteen and fifteen at work painting or filling out with colors the printed designs. So Germany is still ahead in cheapness and undersells England in the English markets.

It will be seen from the following passages that the proposal to introduce Manual Training in public schools meets with the warm approval of the Commission.

The only real question is, whether manual training as introduced in so many places, is a sure means of obtaining the desired result. On this point opinions will naturally differ; but we are compelled to say that, having approached the consideration of the subject with the single purpose of ascertaining and stating "the truth, the whole truth, and nothing but the truth," the facts of experience and the testimony of thoughtful observers which have come under our notice points with almost absolute unanimity in one direction. We are persuaded that manual training in the public schools supplies a deeply felt need; that its processes have become well enough established to enable any community to enter upon its intelligently and successfully; that it involves no great expense or difficulty; that it should be introduced as rapidly as possible into every grade, beginning with kindergarten work; and that it promises the richest results to the great body of our people, physically, intellectually and morally.

It will not diminish the vigor and efficiency of our public schools as they now exist, but will increase both; it will not divert our children away from industrial pursuits, but direct them towards them; it will not result in the teaching of trades by the public schools, but will train the body of youth, intelligently prepared to enter upon all trades; it will not interfere with the highest intellectual training of those who are designed for professional pursuits, but will give a body of common knowledge and common skill which will be of incalculable value to the students of all professions; it will not lower the standard of instruction, but will elevate it; and, apart from its influence on the schools, it will help to give dignity and efficiency to every form of useful labor.

After quoting a passage on the value to manufacturers of educated labor, from the "Special Report on Industrial Education in the United States," issued by this Bureau, in 1883, the success of the experiment of Manual Training is thus stated:

SUCCESS OF THE SYSTEM.

We have already said, but we beg leave to repeat, that the views here presented by the Commission are such—and such only—as have been sustained by ample experience. Wherever an attempt has been made to introduce manual training into the public schools—whether in a special school, as in Philadelphia, or in the general system as in New York, New Haven, and many other places,—whether it has been supported by appropriations, from the municipal treasury, or by private contributions of public-spirited citizens, the result has been the same; teachers, pupils and parents vie with each other in their testimony to its healthful and beneficial influence. We believe that no instance can be found where the work, having once been begun by the proper authorities, has been allowed to stop or to diminish; but, on the contrary, in nearly if not quite every case where even a small and tentative beginning has been made, with the least possible expenditure of money, the work has been increased with the growing approval and confidence of the entire community. Perhaps the most striking instance of the rapid extension of the system in the face of doubt and hesitancy at the beginning, but in obedience to the growing demands of public sentiment, is that of New York city. In accordance with the recommendations of a committee, the Board of Education provided for the beginning of such training in a few of the grammar and primary schools of the city, in February, 1888. The interest of the pupils and of parents in the work increased so rapidly that it was extended, on the application of the local school trustees into a large additional number of schools, until, in November of the same year, nearly ten thousand children were receiving that form of instruction.

The topics of "Manual Training in Rural Schools," "The Need of Teachers," "The Normal Schools," "Manual Training in Reformatories," "Manual Training for Young Women," and "The Kindergarten" are each in turn briefly considered. The report closes as follows:

> We beg leave, finally, to submit the following recommendations:
>
> (1) That provision be made for the introduction of manual training into each State Normal school, with a prescribed course of wood work for all students, iron work for young men, and sewing and cooking for young women, such courses to be subject to modification from time to time under proper authority, and to include an amount of wood work not exceeding what on an average could be accomplished in a single course of twelve weeks (or in two courses of six weeks each), if the work were so arranged as to give the principal portion of the time to this course of exercise; the amount of iron work to be left optional with each institution. The work should be accompanied at every step, with a progressive course in drawing.
>
> (2) That an appropriation of five thousand dollars be made to each State Normal school for the establishment of the proper plant, including building, tools, equipment, etc., and a further sum of two thousand dollars annually for maintenance.
>
> (3) That after April, 1890, no certificate or diploma be granted by a normal school to any pupil or graduate, who shall not have completed at least the equivalent of a six weeks' course in wood work, as already mentioned.
>
> (4) That for the purpose of providing facilities for pursuing this course of training to teachers already employed, and who may wish to acquire it, provision be made for the maintenance at present of a short summer course in wood work and iron work at the State College where such instruction has been maintained for several years.
>
> (5) That the State make a moderate annual appropriation to be given on a uniform basis to such districts as shall undertake the establishment of manual training in, or in connection with, their public schools, with specific provision, however, that such funds, whether provided by the State or the district, shall not be used for the teaching of specific trades.
>
> (6) That provision be made for the introduction of drawing as a required study in every school in the State, at the earliest possible day.
>
> (7) That the law require every district in its subsequent erection or arrangement of buildings for school purposes, to make suitable provision for a room or rooms to be used for the purposes of manual training.
>
> (8) That provision be made or authorized for the grouping of rural schools, for the purposes of manual training, in such a way that, either the scholars from schools included in each group may go in sections from each school to some one conveniently located, there to receive instruction in manual training, or that a special instructor in manual training may be appointed, whose time shall be assigned to each school in turn.
>
> (9) That for the purpose of securing direct encouragement, oversight, guidance and inspection of all such work in the State, a special Deputy Superintendent of Public Instruction be appointed in the manner now provided by law, with a sufficient salary to secure service of the highest order, who shall be assigned by the Superintendent of Public Instruction to special duty as inspector for manual training.
>
> (10) That provision be made for the immediate introduction of manual training, arranged upon an educational method and for educational ends, in connection with a prescribed course of elementary studies, into the reformatory institutions provided by the State for youth of both sexes; but that in such cases no attempt be made to teach specific trades, except so far as such trades may be necessarily carried on for the purpose of supplying articles needed for consumption in the institutions themselves.
>
> (11) If the Commission may venture to suggest a recommendation upon a subject not intrusted to it by the resolution under which it was appointed, we would respectfully but most earnestly recommend that any change which may be made in the provision for the maintenance of the soldiers' orphan schools, shall require the introduction of manual training, at least in wood-work for boys and sewing and cooking for girls, as an essential part of the course of instruction.
>
> For illustrative material forming a small part of that upon which the conclusions of the commission are based, reference is made to the following "Accompanying Papers" and appendices.
>
> Respectfully submitted.
>
> GEO. W. ATHERTON.
> A. H. FETTEROLF.
> NATHAN C. SCHAEFFER.
> GEORGE J. LUCKEY.
> THEO. W. BEAN.

The twenty-five following pages are given to "Accompanying Papers;" the first two, A and B, are "memoranda by Col. Theo. W. Bean." The first treats of the present school law of Pennsylvania in relation to Manual Training, in which he argues that there is nothing to *prevent* its introduction in the public schools. In B, the legislation of other States is recorded. That of Massachusetts, and of New Jersey, has already been given elsewhere in this Report. These four States, namely, Massachusetts, New York, New Jersey and Pennsylvania, are all the States in which special legislation in regard to this subject is recorded.

NEW YORK.

An act was passed in 1888 entitled:

An act to authorize the establishment and maintenance of departments for industrial training and for teaching and illustrating the industrial manual arts in the public schools and normal schools of this State.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Boards of education of cities and villages, and of union free schools and trustees of public school districts, are hereby authorized and empowered to establish and maintain a department or departments in such schools for industrial training and for teaching and illustrating the manual or industrial arts, and the principles underlying the same; and for that purpose they are respectively authorized to purchase and use such materials and apparatus, and to establish and maintain such shops, and to employ such instructor or instructors, in addition to the other teachers in said schools as in their judgment shall be deemed necessary or proper.

SECTION 2. Said boards of education and trustees, or other bodies now authorized by law to levy and raise taxes for school purposes, are authorized to levy and raise by taxation, in addition to any amount or amounts which they are now, respectively, in any city, village or district, authorized by law to raise for school purposes, and in the same manner, the necessary funds to establish and maintain such industrial departments as aforesaid: *Provided, however,* That trustees of school districts not organized as boards of education shall exercise no greater powers in these respects than they now possess by law, except upon a vote of such district.

SECTION 3. The State normal and training schools which are or hereafter may be established in this State, hereby are and shall be required to include in their courses of instruction the principles underlying the manual or industrial arts, and also the practical training in the same, to such an extent as the superintendent of public instruction may prescribe; and to such further extent as the local boards respectively of said normal and training schools may prescribe.

SECTION 4. This act shall take effect immediately.

PENNSYLVANIA.

In this State an act was approved June 25, 1883, entitled:

An act authorizing central boards of education, in cities of the second class, to establish and maintain schools for instruction in the mechanic arts and kindred subjects.

SECTION 1. *Be it enacted, etc.,* That in every city of the second class the central board of education shall have power to establish and maintain one or more schools for the instruction of pupils in the useful branches of the mechanic arts and kindred subjects, to provide the necessary buildings, machinery, apparatus and materials, and to employ teachers and instructors therefor.

SECTION 2. Such schools shall be subject to such rules and regulations as may, from time to time, be prescribed by the said board; under said rules and regulations, they shall be open to the admission of such pupils, as are not enrolled, as well as of such as are enrolled, in the ordinary public schools of the city, and instruction may be given therein in the evening, as well as the day.

SECTION 3. The course of instruction shall, from time to time, be prescribed by said board and may include chemistry, mathematics, natural philosophy, and other branches appertaining to the mechanic arts.

A paper on "Manual Training in Reformatory Institutions" by Dr. A. H. Fetterolf, President of Girard College, and a brief paper on "Normal Schools," by Dr. N. C. Schaeffer follow. This portion of the volume ends with the following report by Superintendent George J. Luckey of Pittsburgh.

INDUSTRIAL EDUCATION IN THE PUBLIC SCHOOLS OF PENNSYLVANIA.

At the first meeting of this Commission, held in Harrisburg, December, 1887, I was requested to inquire into the extent to which manual training had been introduced into the schools of the State, and report the result of my inquiries to the Commission, and to make such suggestions as I thought prudent and wise with reference to State aid for the furtherance of this branch of school work in the public schools of the Commonwealth. By travel and correspondence I find that no steps have yet been taken by the local school authorities looking for the introduction of any branch of manual training in any of the ungraded country schools of the State; but in quite a number of the populous centers a beginning has been made, and the results have been very generally commended by the intelligent people of these localities. In Philadelphia the movement has assumed a very considerable magnitude, and the school authorities have ceased to talk of it as an experiment and are actively engaged in making provision for its general introduction into all the grades of the city schools. Several excellent institutions of a higher grade, for the education of young men for the arts and industries have long existed in Philadelphia, and the excellent work done by them has created a public sentiment in favor of eye and hand training which does not exist in most sections of the State, and this sentiment has greatly aided the school officials in their present efforts to lay the foundation for this work in the public schools of the city. If there were no other examples presented, the work already done in Philadelphia would sufficiently demonstrate the utility and feasibility of making manual training a part of the course of study in all graded schools. While other cities and a number of towns in the State have made satisfactory experiments in this line, none have as yet incorporated it permanently into their school system. Pittsburgh, encouraged by the generous offer of Mr. Henry Phipps, Jr., to provide a teacher, opened a school kitchen for the training of young ladies in the art of cooking; this school has already demonstrated the wisdom of its projector, and will most likely become part of the school system. A number of small towns on the Allegheny river have made experiments in the simpler kinds of wood and iron work, and in every locality visited or officially heard from, every effort made to extend the course of study in an industrial direction has met and is meeting the approval of the citizens.

While my instructions did not contemplate any investigation of this subject beyond the limits of the Commonwealth, I have, nevertheless, visited a number of cities in other States where extensive experiments have been made in this line of school work, and while in none of them is the work so extensive or general as in Philadelphia and Boston, yet in Baltimore, Washington, Toledo and Cleveland, they each have a single plant in which, however, very thorough and practical work is done for a certain advanced grade of pupils. In most cities where there is a single school, the plant has been established by private enterprise, and although under the charge of the public school authorities, it is usually for advanced pupils, and its advantages are not within reach of the great mass of pupils that attend the public schools. Often the very class of pupils that would be the most inclined to attend these schools and who need most the training here offered, do not, nor cannot, remain in school long enough to be admitted.

It will thus be seen that in order to extend the advantages of manual training to all classes of children, the plan of establishing special schools and employing special teachers must be abandoned, and our corps of regular teachers must be fitted and qualified to do as successful and thorough work in this line as they now do in the required school branches.

In presenting this idea to a number of prominent men, I have been uniformly met by the question "are all our teachers to be educated in carpentering, tailoring, cooking and machine building?" thus showing that the fundamental idea of manual training is often misunderstood by many of our most intelligent citizens. Hence it is that I place second in importance to the education of our teachers for their work, the proper education of the people in the objects to be obtained by manual training. Somehow the idea has become general, that manual training means the training of children for specific trades, and that the children are to be fitted in the schools to be machinists, carpenters, joiners, dressmakers and professional cooks, while the true idea that a hand and eye training is a necessary supplement to mental training, to round out and complete the education of all the child's powers and faculties and properly fit him for all (not any one) of life's callings is only understood by the few. Reading, writing, arithmetic, geography and grammar are as much a special training for the professions, and no more, than manual training is for the trades. While the idea of trades should be scrupulously avoided in presenting any plan for the introduction of industrial work in the common schools, I desire to call your attention specially to the great need of making provision for the special education of the inmates of our reformatories, in some of the common industrial callings, so that when they are released from these institutions they may be able to find readily some useful and honorable employment and not be driven by necessity to join the already large and growing army of professional tramps that throng our highways. And, if not foreign to the objects for which our Commission was organized, I would like to suggest to you the propriety of recommending to the Legislature the necessity of taking some steps towards securing compulsory primary education.

We must not forget that we are a republic, and that every citizen is a sovereign, and that the perpetuity of our free institutions depends upon the intelligence, virtue and culture of the people. The rapid growth in population, and the great influx of an uneducated foreign element that appears to have but little interest in the proper rearing of their children, have produced a long list of uneducated voters in our Commonwealth, and the law of self preservation demands that some compulsory measure be adopted that will secure to every child in the State the advantages of a primary education, thus making him an intelligent, helpful and useful member of society.

Respectfully,

GEO. J. LUCKEY.

The first Appendix, which fills 372 pages, is entitled "Technical and Industrial Education in the United States." This, as may be inferred, includes much more than Manual Training in public schools and, in fact, comprises something of the field sought to be covered by the "Special Report on Industrial Education in the United States," issued by the U. S. Bureau of Education, 1883, and by the volumes entitled Parts II. and III. of the present Report.

The following, from Dr. Atherton's introductory pages, shows the thoroughness of his work, and gives an interesting list of places and institutions in which some forms of Industrial and Technical Education have been introduced.

In order to ascertain as fully as possible the extent to which manual training and industrial education in general is in progress throughout the United States, the following letter of inquiry was addressed to each State and Territorial Superintendent of Schools:

STATE COLLEGE, CENTRE COUNTY, PA., *July* 23*d*, 1888.

DEAR SIR: Will you be kind enough to send me for the use of this Commission any copies of your annual report, which contain statements or discussions of the subject of industrial education, and especially any other documents that your office may have published, treating particularly on this subject. I desire also to ascertain how far the subject has been introduced into the schools of your State, either public or private; and if you would have the accompanying blank filled out, so that I may ascertain the results of the work in such places, it would be a very important service to our State and to the Commission.

Very respectfully yours,

GEO. W. ATHERTON.

Replies to this letter were promptly sent by the State Superintendents of Alabama, Colorado, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin. They not only named the places where industrial education is in progress, but their replies were accompanied in many cases with documents, and in some with helpful suggestions.

On receipt of these replies, the following letter was addressed to each institution or officer mentioned in them:

STATE COLLEGE, PA., *September* 14, 1888.

DEAR SIR: It would be a very great service to the Commission and to myself personally, if you could send me copies of your reports or other documents giving full accounts, either of your work in manual training or of any discussion, municipal ordinances, or other legislation relating to it. I should be especially glad of anything you may have indicating the results of the work thus far, and the attitude of the public mind towards it. No details can be too minute to be of service. I shall be glad to reciprocate your courtesy by any means in my power.

Yours very respectfully,

GEORGE W. ATHERTON.

The responses to this letter have been most ample and generous, including not merely printed documents, but in several instances, full and detailed statements specially prepared for the use of the Commission. It will be found, accordingly, that the facts presented in this report embody the results of the most varied and most recent experience, and may be accepted as furnishing a trustworthy guide for similar undertakings in this Commonwealth, which, in many respects, it will be seen is not behind her sister States.

The following list thus obtained, supplemented in part from other sources, will give some idea of the extent to which this work has been entered upon. The list includes several which should be classed under the head of technical or scientific institutions, devoting themselves principally to the higher branches of said instruction and having little or no relation to the public school systems of their respective States; but while such institutions are not directly connected with the inquiries in which this Commission was primarily interested, it seemed desirable to give them a place in the enumeration, in order to indicate the facilities already provided for higher as well as for lower technical training. Much care has been used to make the list as nearly complete as possible, and it is believed to contain every place in which manual training has been undertaken to any important extent; yet the movement in this direction is so general that it would not be surprising to find that schools had been established even while this report is going through the press. It should be added, to avoid misapprehension, that the list does not include the institutions known as "industrial schools," which are to be found in very many places throughout the country. Such schools are generally, if not always, either charitable or corrective, and designed for poor, homeless or otherwise unfortunate children. Manual occupations are there followed for the purpose of giving employment and forming habits of industry, rather than with an educational aim, and therefore have no place in the present work.

PLACES IN WHICH TECHNICAL OR INDUSTRIAL EDUCATION IS CARRIED ON.

In the State of Alabama:
Auburn, State Agricultural and Mechanical College; *Montgomery*, ——; *Tuskegee*, Normal School; *Huntsville*, ——.
In the State of Colorado:
Denver, Denver University (Haish Manual Training Department); *Fort Collins*, State Agricultural College.
In the District of Columbia:
Washington, Public Schools.
In the State of Connecticut:
Mansfield, Storrs Agricultural College; *New Britain*, Normal School; *New Haven*, Public Schools.
In the State of Florida:
Jacksonville, Colored Graded School; *Lake City*, State Agricultural College.
In the State of Georgia:
Atlanta, Atlanta University; School of Technology.
In the State of Illinois:
Beardstown, Public Schools; *Chicago*, Chicago Manual Training School; *Moline*, Public Schools; *Peru*, Public Schools; *Urbana*, Illinois State University.
In the State of Indiana:
Indianapolis, Public Schools; *Lafayette*, Purdue University; *Terre Haute*, Rose Polytechnic Institute.
In the State of Iowa:
Ames, State Agricultural College.

In the State of Maine:
Orono, The State College of Agriculture and the Mechanic Arts.

In the State of Maryland:
Baltimore, Public Schools; *Kent County*, Public Schools; *McDonogh*, McDonogh Institute; *Talbot County*, Public Schools.

In the State of Massachusetts:
Boston, Public Schools; Institute of Technology; *Cambridge*, Public Schools (Rindge Manual Training School); *New Bedford*, Public Schools; *Salem*, Girls' Normal School; *Springfield*, Public Schools; *Worcester*, Worcester Polytechnic Institute.

In the State of Minnesota:
Minneapolis, Public Schools; University of Minnesota; *St. Paul*, Public Schools.

In the State of Missouri:
St. Louis, Polytechnic School of Washington University.

In the State of Nebraska:
Omaha, Public Schools.

In the State of Nevada:
Carson City, Carson High School; State Orphans' Home.

In the State of New Hampshire:
Concord, Public Schools; *Dover*, Public Schools; *Manchester*, Public Schools; *Nashua*, Public Schools.

In the State of New Jersey:
Elizabeth, Public Schools; *Hoboken*, Public Schools; Stevens Institute of Technology; *Montclair*, Public School; *Morristown*, Public Schools; *Newark*, Public Schools; *Orange*, Public Schools; *Vineland*, Public Schools.

In the State of New York:
Albany, High School; *Brooklyn*, Pratt Institute; *Ithaca*, Cornell University; *Jamestown*, Public Schools; *New York City*, Public Schools (12); College of the City of New York; Hebrew Technical Institute; Workingman's School; Industrial Educational Association; *Troy*, Rensselaer Polytechnic Institute.

In the State of Ohio:
Cincinnati, Technical School; *Cleveland*, Case School of Applied Science; Manual Training School; *Toledo*, Manual Training School.

In the State of Pennsylvania:
Carlisle, Indian School; *Haverford*, Haverford College; *Philadelphia*, Manual Training School; Girard College; Pennsylvania Museum and School of Industrial Art; Spring Garden Institute; *South Bethlehem*, Schools of Civil and Mechanical Engineering, Mining and Metallurgy (Lehigh University); *State College*, The Pennsylvania State College (departments of Mechanio Arts and Mechanical Engineering); *Swarthmore*, Swarthmore College; *Tidioute*, Manual Training School.

In the State of Rhode Island:
Newport, Girls' Industrial School; Boys' Industrial School; *Providence*, Friends' School; Incidentally in some of the Public Schools.

In the State of South Carolina:
Charleston, Porter Academy; *Chester*, Brainerd Institute (colored); *Columbia*, South Carolina University; Benedict Institute (colored); *Orangeburg*, Claflin University (colored).

In the State of Virginia:
Blacksburg, Virginia Agricultural and Mechanical College; *Crozet*, Miller Manual Labor School; *Hampton*, Hampton Normal and Agricultural Institute; *Richmond*, Mechanics' Institute.

In the State of Wisconsin:
Tomah, Public Schools; *Sparta*, Public Schools; *West Eau Claire*, Public Schools; *Whitewater*, State Normal School; *Milwaukee*, State Normal School; *Stoughton*, Public Schools; *Madison*, University of Wisconsin.

The superintendents of schools in the following States and Territories failed to reply to the repeated inquiries of the Commission:

Arizona, Arkansas, California, Dakota, Delaware, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Michigan, New Mexico, Texas, Utah, Washington and Wyoming.

The following accounts of the organization and work of different institutions is arranged in the order of States alphabetically. It would be more useful for some purposes to classify the institutions in groups according to their general character and aim; but, aside from the inherent difficulties of such a classification, the present arrangement seemed more desirable as showing the extent of the distribution of industrial education throughout the country. Not all institutions mentioned in the preceding list are described in the following pages. The design has been to include all the most important instances of industrial education not above the high school grade, in connection with, or in close relation to the public schools, with a sufficiently full account of a few typical institutions of higher grade.

The information given is compiled mostly from documents issued by the institutions themselves, but quotation marks are introduced only in cases where passages of considerable length are quoted without change of phraseology or arrangement.

The sixty-four pages of illustrations which are included in Appendix I comprise the plates showing the carefully arranged courses in wood and iron working as given in the Pennsylvania State College and are taken from the annual report of that college.

The second Appendix, which fills 162 pages, is entitled "Technical Education in some Foreign Countries," namely: France, Germany, Great Britain, Russia, Sweden, and Switzerland. With three pages of references to reports and books consulted and a brief index, this handsome volume is brought to an end.

APPENDIX Q.

PAPERS

RELATING TO

DRAWING IN PUBLIC SCHOOLS.

I. Introduction.

II. An outline course of Instruction in Industrial Drawing by Mr. Charles M. Carter, "Agent for the promotion of Industrial Drawing" under direction of the Massachusetts Board of Education. (1885.)

III. A paper on Industrial Drawing and Manual Training read before the State Teachers' Association of Colorado, December 27, 1887, by Mr. Charles M. Carter.

IV. Address on Drawing in Public Education before the University Convocation of the State of New York at Albany, July 9, 1879, by Mr. John S. Clark, of Boston.

V. The Industrial Art Teachers' Association of Massachusetts. Papers read before the Association at the annual meetings. (1884–1889.)

VI. Industrial Art Education as presented before the National Educational Association in Chicago, in 1887, and in San Francisco, in 1888.

VII. Practical value of Drawing and Clay Modelling in Primary Schools, by Superintendent H. W. Compton, of Toledo, Ohio.

VIII. Drawing in the Common Schools of New York in 1888.

IX. Historic Ornament. Why Drawing Teachers should teach Historic Ornament, by Wm. T. Harris, LL. D.

I.

INTRODUCTION.

As, in ending the first volume of this Report, the addresses of General Walker and of Lord Reay, foreshadowed, as it were, the main contents of this second volume; so, now, at the close of this volume, the main purpose of the whole Report reappears in this final Appendix, (more especially in the notable paper by Professor Harris, with which it closes,) as the musician's theme persistently recurring, in spite of frequent variations and far off discursive wanderings. Not that the promotion of Industrial Art Drawing in Public Schools is the sole purpose of this work; but, rather, the end and object which Industrial Art Drawing seeks to attain; that, it is, which pervades, animates, and justifies this Report.

As Part I of this Report, is almost wholly given to the consideration of Industrial Art Drawing in the Public Schools, it was not intended, in this volume to dwell at any length on this phase of our subject, except so far as necessarily results from its relations to Industrial Training.

The movement for the introduction of Industrial Training in schools has progressed rapidly and inevitably tends to modify the methods of teaching, as well as the purposes of this study of drawing by diverting it more and more from artistic to mechanical industries; that which was but an incident in the original plan, having recently become apparently the paramount purpose; this has happened, all the more surely, by reason of the departure from the country and subsequent death of Walter Smith, and by the decease of the two leading educators who first brought about his coming to our shores.

This present volume has, in consequence, been largely given to an account of this later development of drawing in public schools. It, however, seems advisable to insert in this Appendix a few papers relating directly to drawing, as showing the prevailing tendency towards the industrial side, and the modifications introduced under the influence of this industrial phase; or, which have been brought about by practical experience in the school room, by which the need of such changes has been suggested.

The first paper comprises the programme of the courses of study for primary and grammar schools, prepared for use in the schools of Massachusetts, by Mr. Charles M. Carter, the agent employed by the Massachusetts Board of Education to supervise the study of drawing in the schools of that State. This scheme was issued in 1885.

The second paper is a recent address read by Mr. Carter before a State convention of teachers held in Denver, Colorado. This address, as published in the Denver Republican of December 28th, 1887, had several illustrations showing the "tools of drawing," the "tools of construction," and of articles made by school children, with others illustrating the several steps of the construction and adornment of these articles; these are here necessarily omitted. In this address the speaker, evidently addressing an audience awake to the movement for introducing *industrial* training in the schools, seeks to show how a knowledge of drawing underlies, and relates directly to, industrial work. It is significant too, that he speaks not of "Industrial Art Drawing," as did Walter Smith, but only of "Industrial" Drawing. It is however to be noted that he himself is not wholly unmindful of the importance of the cultivation of a perception of the beauty of objects, or of the value of free-hand drawing; but, of these he speaks rather as suggesting them, and with bated breath, than with the outspoken confidence of one who knew that they were the essential truths on which the whole superstructure was to rest, as did Walter Smith when, with the faith and zeal of an apostle, he fired the hearts of educators and legislators, and inaugurated a great educational movement.

This incident serves to show how far interest in the school training in industrial work has extended throughout the United States; and also how this industrial mechanical development, for the moment predominates. Drawing is to be recommended as an important *aid* to industrial training! With Mr. Carter's great predecessor, it was "Drawing," first and last! Indeed, one can easily imagine that he would have been quite ready to paraphrase St. Paul's famous saying and to declare Drawing "to be profitable for all things."

Mr. Carter would probably urge that this fundamental importance of drawing was now so thoroughly understood by the audiences he addressed in Massachusetts, that there was no longer occasion to dwell upon it.

It will hardly be denied, however, that the arguments urged by the advocates for industrial training in schools are directly addressed to the practical side of human nature; with one breath, all training in trades is repudiated, while in another, the teaching of the technical skill of carpenter and of blacksmith, are distinctively, definitely urged!

It was the awakening of the perception of natural beauty, the development of art ideals, and the re-creation of art hand-workers, that the first originators and promoters of the introduction of industrial art drawing in the public schools, proposed. It was to develop the ideality of American workers, not merely to stimulate their already active mechanical and mercantile instincts and traditions, that they sought. They hoped thus, eventually, to remove the reproach cast on Americans by the older nations, of being utterly without any knowledge of art, or any native art workers. It is to be feared that the present advocates of industrial training in schools, cherish no such purpose, have no such ideals.

It will be seen that Mr. Carter's address shows very clearly and practically how the teaching of industrial drawing is the first step towards Manual Training.

Mr. John S. Clark of Boston, Mass., who, first as partner in the firm of Osgood & Co., later with L. Prang & Co., and now as head of the Prang Educational Co., has been largely associated as publisher with the drawing movement in its earlier phases and who is now closely identified with the more recent industrial and constructive phase of the study, delivered an address before the University convention in Albany, New York, in 1879.* This address was issued in 1880 in pamphlet form, and copiously illustrated, by L. Prang & Co.

As this address, which would otherwise have been referred to in the former volume of this Report, failed to reach the author before the publication of Part I, and, as it is of interest as an attempt to aid both in the general dissemination of knowledge in regard to the uses, as well as in the practical introduction of the new study in the schools, a few extracts are here given; the text and illustrations are so closely related that I am not able to quote from it at length. A scheme for a course of drawing adapted to each grade of the public schools is given; with a page of illustrations for each grade.

The little book is thus adapted to serve the general reader as a capital showing of what, in its author's opinion, is meant by drawing in the Public Schools, and is also well fitted to show to teachers and school officials the definite steps and grades of the new study as arranged for use in the schools. It will be seen that Mr. Clark, in this address delivered nine years ago, made the industrial constructive features most prominent.

It may be of interest to the student to compare the new programmes and words of Mr. Carter and those of Mr. Clark, with those of Walter Smith and his fellow workers; as given at length in Part I.

In the Normal Art School, and elsewhere, the tendency has naturally been, more and more, to the elaboration of pedagogical details, while, as we have seen, among educators generally, the immediate movement is so largely towards constructive work, that the high artistic ideals of Messrs. Smith, Perkins, and Philbrick, are in danger of being forgotten. This seems incident to all movements, the master, first utters the awakening inspiring word; the later disciples are busied about its grammatical interpretations.

At the present moment the disposition to exalt the importance of "things" over "words" threatens, unconsciously to themselves, to transform the teachers, whose business it is admitted by all is to train the intellectual nature of man (for the advocates of the New Education by no means deny *that;* they only seek to add the training of the physical and moral natures to that of the intellectual) into mere materialists.

Educators should ever keep in mind that it is not mechanics but men, that the public school teacher is set to educate. The Republic asks of him good citizens rather than good artisans. The only valid claim for teaching drawing, either artistic or constructive, or for giving *any* industrial training in public schools, is that such training will tend to make better men, more capable, intelligent, useful men and women; and, therefore, better citizens.

The accounts which follow of the annual meetings in Boston of the Industrial Art Teachers' Association, the early meetings of which were recorded in Part I (see pages 200-1)—serve to show that interest in the progress and development of the study of drawing in its various relations and applications, is still active and undiminished in Massachusetts.

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*"Drawing in Public Education: The Features of the Study which should be taught in Primary, Grammar, and High Schools. An address delivered before the University convocation of the State of New York, at Albany, July 9, 1879, by John S. Clark. Boston: L. Prang and Company, 1880. Copyright, 1880, by L. Prang & Co. Ill. Pp. 16."

The extracts from the official Reports of the Annual Meetings of the National Educational Association held in Chicago in 1887 and in San Francisco in 1888 give a view of the general condition of Industrial Art Drawing throughout the United States.

The evidence given by Superintendent Compton of Toledo, as to the practical value of drawing and clay modelling in the primary schools of that city, will be found of interest. The final paper, by Prof. Wm. T. Harris, is a forcible plea for the development of the æsthetic nature, for the training of the child to a comprehension of those ideals of beauty in Art which have stood the test of the centuries.

SUMMARY OF THE STATISTICS RELATING TO DRAWING IN 1884.

In the Report of the Committee on Drawing made to the National Educational Association at Madison in 1884, which is given in Appendix "E," Part I, of this Report, 72 cities in 17 States and the District of Columbia, are reported in which drawing is taught in the common schools.

The methods of teaching in each city are thoroughly analyzed and show that in most of these cities the system was defective, the main deficiencies being a lack of intelligent supervision and in the supply of drawing models and objects.

Replies from forty Normal Schools, representing 18 States and the District of Columbia, are similarly tabulated. These returns show much interest in the subject in the Normal Schools, but in very few of them is the subject sufficiently developed to satisfy the standard set up by this Committee. In the Annual Report of the Commissioner of Education for 1884–5, 72 cities out of the 276 enrolled in Table II, report special teachers in drawing, and the statement is also made that this study is given in many other places which employ no special Teacher; so that it appears that some knowledge of the value of this study is widely disseminated over the United States, though the adoption of the best methods of teaching the study is not nearly so general as could be wished. Since the Normal Schools, theoretically at least, train the teachers of the common schools, the introduction of the study in so many of them is an encouraging feature.

II.

A PRACTICAL PROGRAMME FOR A COURSE OF INDUSTRIAL DRAWING IN PUBLIC SCHOOLS.*

By Charles M. Carter.

The following schedule of exercises in drawing, as arranged for a consecutive course in the public schools, prepared by the Agent of the State Board of Education of Massachusetts, has been tested by use in the schools of that State.

INDUSTRIAL DRAWING.—OUTLINE OF AN EIGHT YEARS' COURSE OF INSTRUCTION FOR PRIMARY AND GRAMMAR SCHOOLS.

Notes.

Industrial Drawing as herein presented is regarded by many educators as *the foundation of industrial training.*

It gives skill in the use of hand and eye, good habits of thought, and appreciation of the beautiful.

Drawing and designing are here combined with the *construction* of objects.

Where workshop instruction is introduced the drawings and constructed work may be of practical examples referring to courses in manual training. This plan shows how the natural tendency of children to occupy themselves in making objects at home, can be made fruitful by intelligent direction.

The plan is arranged so that it may be incorporated with courses of study prepared by school committees.

It may be used either with or without text books. Using it as a basis teachers can determine whether to omit, or add to the exercises of the book.

All work may refer to the following or their combinations :—

1. Working Drawings.
2. Perspective Drawings.
3. Invention or Design.
4. Constructed Objects.

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*Industrial Drawing : Outline of an Eight Years' Course of Instruction for Primary and Grammar Schools, used at the Massachusetts Normal Art School, and in State work under direction of the Massachusetts Board of Education, by Charles M. Carter. Copyright, 1885, by C. M. Carter. Revised edition. Pp. 8.

GENERAL OUTLINE OF METHOD.

FORM.
- OBSERVATION,
  - Eye.
  - Hand.
- EXPRESSION,
  - Construction,
    - Clay.
    - Paper.
    - Wood.
    - Metal, etc.
  - Drawing,
    - Working Views,
      - Single.
      - Combined.
      - *General Divisions.*
        - Freehand.
        - Instrumental, using Geometric Problems.
      - *Ways.*
        - Same Size.
        - Reduction.
        - Enlargement.
        - Dictation.
        - Memory.
    - Perspective Views, Freehand.
  - Language,
    - Oral.
    - Written.
- INVENTION; OR DESIGN, (*Elementary or Applied.*)
  - *Principles.*
    - Symmetry,
      - Axis of Symmetry.
      - Unit of Design.
    - Repetition, Alternation,
      - Horizontally.
      - Vertically.
      - Around a Centre.
      - Over a Surface.
    - Balance.
  - *Materials for Suggestions.*
    - Sticks, Splints, Pegs.
    - Paper Geometric Forms.
    - Paper Geometric Forms, varied.
    - Plant Form, conventionalized.
    - Historic Ornament.

OUTLINE OF EACH YEAR.

Ideas of form come from *Observation*, they lead to *Expression*, and may be combined into new forms by *Invention or Design*.

FIRST YEAR.

[*Ten minutes daily, using slates and blackboard.*]

OBSERVATION of the forms of objects in each year, by eye and hand.

Expression, employing Construction, Drawing, and Language.

GENERAL FORM OF OBJECTS.—Sphere, Cube, Cylinder, Square Prism, Triangular Prism. Teach objectively as wholes. *Construct* each of clay. Observation and expression further developed by moulding simple objects based on them; as an orange, dice, stick of candy, etc. From the objects first used teach the *common qualities* of form, viz.: SURFACE, *plane* and *curved*; LINE, and POINT.

Commence teaching and representing the details of these qualities from models and objects.

I. POINTS: *Position*,—Centre, Above, Below, Right, Left.

II. LINES: *Direction*,—Straight, Curved; *Position*,—Vertical, Horizontal, Oblique; *Relation*,—Parallel, Perpendicular, Inclined; *Color*,—Light, Dark. Dividing into halves and fourths.

III. ANGLES: Right, Acute, Obtuse.

Objects and figures containing the above should be drawn.

Invention.

Optional. If taught, to be similar to that of the second primary year.

SECOND YEAR.

[*Fifteen minutes daily, using slates, paper, and blackboard.*]

Review work of the first primary year, including moulding.

Expression, employing Construction, Drawing, and Language.

From the following models: Triangular Prism, Square Prism, Pyramids, etc., teach:—

IV. TRIANGLE: Right-Angled, Isosceles, Equilateral.

V. SQUARE: Diagonals, Diameters.

VI. OBLONG.

Judging, Measuring, Dividing, and Ruling Distances.

Draw Single Freehand Working Views of models, objects, and ornament illustrating the above plane figures. *Construct* them of clay, paper, wood, etc.

Substitute paper for the slate during the last half of the year.

Invention.

Principles.—Symmetry, Repetition, and Alternation.

Materials.—Sticks, colored paper Triangles, Squares, etc.

Teach pupils to arrange the materials so as to express the principles. Subsequently replace the materials by lines. Tracing around units allowed.

The materials may also be used to represent various objects, as house, ship, etc. Teach the names of colors represented by the sticks and papers, and cultivate a taste for beautiful combinations.

Combine at times, in the same lesson, form, drawing, invention, color, arithmetic, language, etc.

THIRD YEAR.

[*Thirty minutes three times a week, using paper and blackboard.*]

The first exercises review the work of previous grades, in order that special attention may be given to the proper use of paper and pencil.

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach :—

VII. Circle : Semi-circle, Quadrant, Circumference, Diameter, Radius.
VIII. Ellipse : Long Diameter, Short Diameter, Foci.
IX. Oval.

Draw Single Freehand Working Views of models, objects, and ornament illustrating the above plane figures. *Construct* them from drawings, using wood, paper, etc. Compare the beauty of curvature illustrated by different forms.

Invention and Design.

Principles.—Symmetry, Repetition, and Alternation.

Materials.—Colored Paper geometric forms both simple and varied. When pupils create the variations of units the arrangements are called designs.

Ruling allowed. In all grades teachers should be familiar with the principles of growth, contrast, repose, etc.

FOURTH YEAR.

[*Thirty minutes three times a week, using paper and blackboard.*]

Review the Circle, Ellipse, and Oval.

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach :—

X. Compound Curves, Reversed Curves.
XI. Hexagon.
XII. Pentagon.
XIII. Octagon.
XIV. Spiral.

Draw Single Freehand Working Views, of models, objects, and ornament illustrating the above plane figures. *Construct* the plane figures, and objects based on them, of paper, wood, etc.

Design.

Principles.—Symmetry, Repetition, and Alternation.

Materials—Conventionalized Leaves, Flowers, and Buds.

Ruling allowed.

In all work strive for beauty of form.

FIFTH YEAR.

[*Thirty minutes three times a week, using paper and blackboard.*]

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach and draw :—

FREEHAND WORKING VIEWS, single and combined, illustrating Plans and Elevations. *Construct* the models of paper, first making simple *developments.* These models will be useful in teaching Freehand Perspective.

PERSPECTIVE VIEWS, *Freehand.* The effects of foreshortening and distance explained in connection with drawing spherical objects, circles, cones, cylinders and objects based on them. Explain that in a *Working View* the eye is supposed to be opposite each part of the view represented. In *Perspective Drawing* the eye remains in one position.

Design.

PRINCIPLES.—Symmetry, Repetition, and Alternation.

Making arrangements on given main lines introduced.

MATERIALS.—Conventionalized Plant Form. Use ruler and tracing paper.

Designs may he *applied* to objects, as pen-wipers, book-marks, etc., *constructed* by pupils. In this and the following years have pupils take "main lines" from good examples and clothe them with different material. Cultivate taste by comparing examples of good and bad design.

SIXTH YEAR.

[*Thirty minutes three times a week, using paper and blackboard.*]

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach and draw :—

WORKING VIEWS, Freehand and Instrumental, single and combined. Two views given to find a third. Marking dimensions. Simple sections. *Construct* simple objects from Working Views, especially models useful in Freehand Perspective.

GEOMETRIC PROBLEMS, and their applications.

PERSPECTIVE VIEWS, *Freehand.* The convergence of parallel lines. Drawings made from the cube, oblong block, etc., and objects based on them.

Design.

PRINCIPLES.—Symmetry, Repetition, and Alternation.

MATERIALS.—Conventionalized Plant Form.

Use Rulers, Compasses, Tracing Paper, and Geometric Problems. Make more elaborate bisymmetrical arrangements, with and without outlines. Exercises may be planned in which designs are applied to objects constructed by pupils. *Historic Ornament* or *Naturalistic Views of Plant Form* occasionally. Use them as a means of cultivating taste.

SEVENTH YEAR.

[*Thirty minutes three times a week, using paper and blackboard.*]

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach and draw :—

WORKING VIEWS, *Freehand* and *Instrumental*, Single and combined. Marking dimensions. Advanced developments. Simple intersections. From measurement make full sized, and scale drawings ; also encourage home *construction* from drawings of such objects as Lamp-shades, Picture-frames, Foot-stools, etc.

GEOMETRIC PROBLEMS completed.

PERSPECTIVE VIEWS, *Freehand. General Review.* Prisms, Pyramids, Plinths and objects based on them ; Groups, Tinting.

Design.

PRINCIPLES.—Symmetry, Repetition, Alternation, and Balance.

MATERIALS.—Conventionalized Plant Form and Details of Historic Ornament.

Use Instruments, Tracing Paper, and Geometric Problems. Designs may be applied to objects constructed by children, such as Lamp Mats, Pin Cushions, Match Boxes, etc.

HISTORIC ORNAMENT OR NATURALISTIC VIEWS OF PLANT FORM, occasionally.

In all exercises cultivate appreciation of the beautiful.

EIGHTH YEAR.

[*Thirty minutes three times a week, using paper.*]

Expression, employing Construction, Drawing, and Language.

From Models and Objects teach and draw :—

WORKING DRAWINGS, *Freehand and Instrumental.* Instrumental work to employ the T Square, Scale, Triangles, and Drawing Board. Practical illustrations of drawing applied in industrial pursuits, Sections, Intersections, and Developments. Continue to encourage home *construction* from drawings of useful objects, such as Boxes, Bird Houses, Tool Boxes, Brackets, Trays, etc.

PERSPECTIVE VIEWS, *Freehand.* Frames, Crosses, and objects based on them. Leaning objects, Groups, Tinting.

Design, Optional.

PRINCIPLES previously studied combined with those of Applied Design.

MATERIALS.—Conventionalized Plant Form, Historic Ornament, Nature.

Design Wall Paper, Inkstand, Paper Weight, Hinge, etc. Occasionally have objects designed that may be constructed by needlework, etc. *Miscellaneous ornament* illustrating the highest forms of beauty.

Use Drawing freely each year in illustrating other studies.

III.

INDUSTRIAL DRAWING AND MANUAL SCHOOL TRAINING.*

A paper read before the State Teachers' Association of Colorado, by Professor Charles M. Carter, at the thirteenth annual meeting, in Denver, Colorado, December 27, 1887.

Ladies and Gentlemen—Most of you have something to do with the important business of so educating children as to fit them for the various requirements of life. We cannot say what their future will be, but we do know that their education should be of a general character, meeting the wants of all. Realizing the importance of this, the public is ever interested in anything which will make instruction more practical. Thus it is that we find at the present day great and increasing interest in manual training and industrial drawing. Indeed, interest has taken such a divided form that we are compelled to give these matters attention.

The children come with untrained minds and senses which are to be prepared for the battle of life. Hence it is that advanced educators are agreed upon the importance of incorporating with our course of instruction exercises which will particularly train hand, eye and mind. Manual training and industrial drawing present themselves as well adapted to secure these ends. Through their agency we present exercises which will so cultivate the powers of the pupil that on leaving school not only will the brain have been trained to act, but the eye and hand as well.

All objects about us, natural or artifical, express the thoughts of their maker. We observe further that all artificial objects are embodiements of thought expressed by hand and eye; we reflect also that they who have produced these objects must have been skillful in the use of their hands and eyes. Such considerations lead us to believe that all pupils must have to do with things, and that a very large proportion will be engaged in their formation. When one considers the thoughts presenting themselves through objects around us we are surprised and awed by their variety and extent. Particularly do we notice that largely they are thoughts concerning form. In one case they consider straightness, in another roundness, and in every instance the mind has been obliged to consider every detail of the forms in logical order, otherwise their correct formation would not have been possible.

The form of things, then, present occasions for logical thinking and skillful use of the hand an eye in their realization.

THE PRODUCTS OF MANUAL TRAINING AND DRAWING.

Let us observe the products of the Manual Training School and the study of drawing in our public schools. Note that they all have to do with the form of things. The drawings represent forms, also the objects. Upon investigation we find that generally products of the Manual Training School are first thought out as to every detail and represented on paper before tools are used to produce the article. We find that drawings in our public schools represent the same kind of facts as those of the Manual Training School and, furthermore, some of the forms represented have actually been made by the pupils, employing tools early available, such as knives and scissors, and for materials, paper, wood, cloth, etc. From such observations as these one is led to believe that drawing is common both in manual training and industrial drawing and, further, that it is the most important factor in either and may justly be considered the foundation of industrial training. Manual training schools recognize its importance by devoting to it a large share of their time, in some schools fully one-third.

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* From the Denver Republican of December 28, 1887.

OBSERVATION OF FORM.

Primarily, then, our subjects have to do with the form of things. For no material object exists without form. Manifestly, in either drawing or manual training our first duty is to lead pupils to consider the form of objects. This, if we proceed rightly, causes us to lead the pupils to know the object of thought by the use of their eyes, hands and minds. For instance, in presenting a simple form like a sphere, through the eye and hand the mind perceives roundness, smoothness and other qualities—all are vividly impressed on the mind. Thus we may lead the pupil by actual contact with things, by regulated perception, to what Sully calls "observation."

EXPRESSION OF OBSERVATIONS BY DRAWING AND CONSTRUCTION.

The manual training school generally requires that every object to be made shall be expressed first by a drawing—an exercise demanding definite preliminary thought regarding every detail of the completed work. It determines length, breadth, thickness, shape—it considers the possibilities of materials and the process of manufacture. So that when the student comes to realize the form represented by construction he has simply to express by other means thought already once marked out by his mind on paper. This secondary expression by construction is the most prominent feature of the manual training school. It gives and requires skill in the us of tools and necessitates a review of the mental processes involved in the expression by drawing. So by the time the object is completed the student has twice, first by drawing, second by construction, expressed thoughts primarily developed by observation.

Drawing as now taught in our schools requires the same observation of form and the same expression by drawing, and in some cities and towns considerable has been done in the secondary expression of forms by construction. Under this head may be placed the various exercises in modelling, paper-cutting and the making of simple articles of wood, cloth, etc. It has been seen that industrial drawing has been so developed as to occasion precisely the same exercise of the hand, eye and mind as in the manual training school, the only difference being in extent of appliances, special workshops, instructors, etc.

THE TOOLS OF DRAWING.

Expression by drawing and construction both necessitate the employment of tools. The principal ones employed in drawing are pencils, brushes, rulers, T squares, set squares, compasses and dividers. The simplest of these tools, the pencil, may be used either freehand or mechanically. Its freehand use, in shaping a square, for example, necessitates regulated thought in regard to size and shape, after which the hand and eye obey the mind in expressing its thoughts. In representing the same square mechanically, the T square, the set square, dividers and compasses are among the means used to secure accurate expression, but their use does not involve as great mental activity as required in producing the figure freehand. The tools used in mechanical drawing invariably lead the mind, hand and eye to depend less on their own independent power and more on the automatic action of the tool. That this is true is shown by the dependence placed on tools by those workmen who have never had freehand training of the hand and eye. A carpenter thus educated will not rely on his eye alone when dividing a distance, placing the two ends of an edge at the same height, or placing an edge in a vertical position or at right-angles to another. Each of these operations, from lack of training, oblige him to use tools which will produce the result mechanically.

In this connection it should be noted that a commission appointed in France to investigate technical schools declared that freehand drawing was a most important element in technical training and that it should precede the study of mechanical drawing, inasmuch as pupils in the latter branch invariably work with greater facility and accuracy if they had received preliminary freehand training.

THE TOOLS OF CONSTRUCTION.

The elementary tools required in construction are: "The seven hand tools—the axe, the saw, the plane, the hammer, the square, the chisel and the file. These are the seven universal tools of the arts, and the modern machine-shop is an aggregation of them rendered automatic and driven by steam."

Knives, scissors, etc., have been employed somewhat in simple exercises connected with drawing as now taught in our public schools.

These inquiries present themselves: "Are all of these tools necessary in developing power of hand, eye and mind?" "Are some more important than others?" and "Are there any which give exactly the same training as others?" These inquiries are necessary, for economy in the way of school appliances must be considered.

THE RELATIVE VALUE OF TOOLS AS EDUCATORS.

All exercises requiring the unaided use of the hand demand the greatest activity of hand, eye and mind. All work requiring the use of tools substitutes more or less for the exertion of these powers mechanical or automatic action. The plane, for instance, is so constituted as to aid us in producing the straight edge and smooth surface. Some skill and thought is needed in its use, but not as much as is demanded in producing the same results by the more primitive use of jack-knife blade, which in the plane is placed in such a manner as to more rapidly, accurately and automatically produce results, and in the planing machine it is placed so as to work altogether automatically. The illustration afforded by the plane could be duplicated by reference to the other universal tools, also to the tools employed in mechanical drawing. The compasses, for example, being so constructed as to enable the pencil to describe circles accurately at the first attempt. To produce the same circle freehand would require much greater exertion of the hand, eye and mind, and so it is that one is led to believe that freehand exercises are of the first importance, obliging us as they do to give the greatest attention to the forms studied.

We find that the painter and sculptor, when expressing the highest forms of art, work with the least mechanical tools.

WORKING DRAWINGS.

It will be interesting in this connection to notice the similar work required of the tools of drawing and the tools of construction. In representing or making the lines of objects for example. The pencil is required to draw them—the saw and plane to shape them. If it is required that they be divided, the pencil indicates the points of division on the drawing, also on the object, and the saw effects the separation of parts required. If it is desired that one edge be at right angles to another the pencil shows it not only on the drawing but on the object, the exact position of the line being ascertained by the set-square, which corresponds to the T square. Again in considering parts of an object that are to be fitted together, the drawing must show the exact size and shape of the connecting parts. In actual construction many of these marks must be again placed on the material, following which one must review the thoughts expressed by the drawing while using tools in shaping the object.

CLAY MODELING.

The regularly-established manual training school bases most of its exercises on the manipulation of wood and iron, while the public schools incorporating manual exercises have found that paper, card-board, thin wood, cloth, clay, etc., are of a character best adapted to their peculiar circumstances.

Of all materials clay offers the freest use of the hands. The hands themselves become the tools and most strongly and directly express a reflex of the mind. It is by this means that the sculptor first expresses his most exalted ideas of the human figure, the highest exemplification of form. The after production of marble or metal is to a large extent merely mechanical. Clay is already largely employed in primary schools; it is confidently expected that it will be found in all the grades in a few years.

BEAUTY OF FORM.

There is one element which we find connected with nearly all form, viz., the element of beauty; through this element it is our hope to refine and develop a love for the beauty of nature and art. Should not, therefore, our study of the form of things call particular attention to this important element? It has been truly said that most people go through the world looking at things, but few people actually see them. The loss which these people unwittingly suffer can only be understood by those whose education has included the element discussed. The improvement of the taste of the individual and consequently of the nation can be brought about through considering the element of beauty in things.

Searching for this element in the exercises and products of the manual training school, we find that it receives little if any attention. The objects constructed are made principally as representations of elementary processes underlining the constructive arts.

Drawing as taught in our public schools, however, has connected, in its every stage, instruction which calls attention to the beauty of forms. Especially is this true in the exercises in invention and design. For instance, the pupils have made the working views of a simple box, the teacher leads the class to see how forms around them have been beautified. It is discovered that much ornamentation consists of simple units of elementary forms arranged upon what are termed "main lines." Taking hints from the forms observed, "main lines" are arranged on the sides of the box to be ornamented and then clothed with units derived from nature or good examples of ornamental art. The interest that children take in an exercise of this kind shows to a marked degree their inherent desire to know of the element of beauty. This desire to possess that which is most beautiful invariably shows itself when people inspect the goods of a store for the purpose of purchasing, and is apparent in many advertisements of goods, railway routes, etc. No one will wittingly select that which is ugly, but alas, how often lack of knowledge results in exhibitions of depraved taste.

STUDYING LIGHT AND SHADE OF COLOR.

If we desire to study all of the important features connected with form we certainly should not overlook the modifications brought about by color or the effects of light and shade and perspective. These features have been well brought out in some high schools, and the teaching of color has been introduced to some extent in primary schools and is likely to receive important developments in the higher grades in the near future. There is space to but little more than hint at the possibility and desirability of study of these important features.

WHO THINKS THE MOST.

In considering what exercises connected with form require the greatest thought activity, we think of the architect, the designer of machines, etc., as the ones to decide on everything appertaining to construction.

It is the architect who decides on the size, shape and position which every piece of lumber shall occupy in the completed building.

It is the machine designer who determines by his drawings the size, shape, position and action of the proposed machine. When these drawings come to the workman he simply translates the forms which they represent into actual objects. Altogether it is evident that greater exercise of the mind is caused in preparing the work than in its execution, from which we may infer that exercises in drawing may be so arranged as to cause considerable thought activity. It must be remembered that there is danger of leading pupils to blindly draw or construct objects, resulting in mere imitations, such as might be performed by a skilled savage. Nothing should be drawn or constructed except as an expression of well-defined ideas in the mind of the pupil.

DRAWING THE FOUNDATION.

The short time at my disposal has allowed me simply to suggest certain lines of thought connected with both the manual training school and the study of drawing. Some of them have not been as exhaustively considered as I desire. The object of this paper, however, has not been to belittle the manual training schools nor to discourage their establishment, for I am thoroughly convinced that those existing as separate schools are of incalculable value. The extent to which it is desirable to connect such work with the existing primary, secondary and high schools is an open question. I have thought it well, therefore, to show you how largely the training given by the manual training school is similar to that given by drawing. Educators are agreed that drawing should be taught in our public schools; they are agreed that it is the first step toward manual training, and it will of itself largely provide occasions for the exercise of the hand, eye, and mind which are reasonable and practicable in the public schools. If, in addition to this instruction, we may provide supplementary instruction in special workshops, we would gladly welcome it.

At the present time there is so much interest in rearranging our course of study, and such a manifest tendency to introduce something of a manual character into our schools, that I have deemed it probable that you would welcome any suggestions of a practical character as to the first steps. Hence it is that I most emphatically direct your attention to the introduction of drawing into our public schools as the first step toward training the hand, eye, and mind through manual exercises.

IV.

DRAWING IN PUBLIC EDUCATION, PRACTICAL SUGGESTIONS FOR COURSES IN PRIMARY, GRAMMAR, AND HIGH SCHOOLS.

BY JOHN S. CLARK.

INTRODUCTION.

The following extracts, from the address delivered at Albany,* by Mr. John S. Clark of Boston, Massachusetts, referred to in the introduction to this Appendix, contain schedules of progressive courses of lessons in drawing, adapted to the primary and grammar public schools; and may be compared with those given by Mr. Carter, in paper II, of this Appendix. These programmes necessarily lose here much in attractiveness, deprived of the admirable illustrations which are given in the original pamphlet as issued by L. Prang & Co., but the general details of the courses proposed remain, and the theory of Mr. Clark, as applied to the whole subject of the introduction of the study of drawing in the public schools, is set forth.

DRAWING IN PUBLIC EDUCATION.

An earnest demand has arisen of late years for the introduction of Drawing into public schools as one of the fundamental branches in public education. The claims made for Drawing as a practical study are by no means light ones, and hence we frequently see it placed in practical education side by side in importance with the three other fundamental studies of reading, writing, and arithmetic. In confirmation of this statement, it is only necessary to refer to the legislative enactment of Massachusetts, requiring the teaching of drawing in all public schools: to the law in this State, less mandatory perhaps than the law of Massachusetts, but one which recognizes none the less the importance of study; to the resolution unanimously adopted by the National Association of School Superintendents at their last meeting in Washington, to the effect that drawing should form one of the fundamental branches of study in all grades of schools: and to the fact that in the public schools of nearly all the leading cities of the country, instruction in drawing is now given with more or less thoroughness. If we were to extend our observation to Europe, we would see a much greater educational interest in the subject than obtains here. We should see in England, France, Germany, and Austria particularly, provisions of the most munificent and comprehensive nature for the promotion of this study, all undertaken for the broadest and most practical commercial and industrial purposes.

It is a great misfortune that so much misconception in regard to the study of drawing exists among our people. It is a misconception shared by all classes; and among teachers particularly, the want of a proper understanding of the subject is a hindrance most seriously felt. In the popular mind, drawing is generally regarded as related principally to artistic work; and when we speak of teaching drawing in public schools, the popular idea is, that what is taught in this study is not practical knowledge but ornamental knowledge,—something that requires special aptitudes of pupils to learn, and something which at best will be of practical benefit to but few pupils. Then, too, we frequently hear advocates of drawing placing its claims in education on incidental or wholly inadequate grounds. Such advocates find in the mere training of the hand and the eye, and the development of taste, which the study of drawing gives, sufficient grounds for its general introduction into public schools. Important as the study is in these respects, I desire to say that we must look for deeper and broader considerations for it than any mere incidental advantages, before we can justify the claims which are now being made for it in practical education.

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* Drawing in Public Education: the features of the study which should be taught in Primary, Grammar, and High Schools. An address delivered before the University convocation of the State of New York, at Albany. July 9, 1879, by John S. Clark, Boston: L. Prang and Company, 1880. Pp. 16 with 7 pages of Illustrations.

GENERAL LIMITS OF PUBLIC EDUCATION.

It is a generally admitted proposition, that what is taught in public schools should primarily have relation to the occupations of adult life; hence the general idea underlying our schemes of public instruction is, that what is taught in the schools should be, in a great measure, a preparation for such occupations. Flowing from this proposition, and in fact forming a part of it, is this educational one, that what is taught in public schools must have a tangible basis of fact to rest upon, and must also be capable of clear exposition and logical formulation.

This point must be clearly recognized; that the public schools are not the places for special studies, applicable to but comparatively few pupils, or for studies which do not possess elements which can be made clear to all. These are primary conditions, which must surround every study which is introduced into the public schools; and now that drawing demands recognition as one of the four fundamental and vital studies to be pursued in all classes from Primary to High Schools, the pertinent question arises, Is it a study of prime importance in daily life, and does it admit of clear and distinct educational arrangement?

This question can best be answered by showing, first, what the educational characteristics of drawing are, and how they can be introduced into public schools; and next by indicating the practicable application of such instruction. I propose, therefore, to point out briefly what its educational features are, and where they find application in daily life.

I will begin my exposition by indicating what should be the general features of the instruction and their educational arrangement in Primary, Grammar, and High Schools.

PRIMARY COURSE.

* * * On entering the Primary classes, pupils can be taught lines, direction, and simple combinations of lines to form angles, with their earliest lessons. Following these exercises should be combinations of lines to form the common figures of plane geometry, such as triangles, square, circle, ellipse, etc. These plane geometric forms are the facts, the elementary units of all forms whatsoever; and pupils should learn their names and shapes, and be able to draw them readily, so that these forms will be as familiar as the letters of the alphabet. When these forms have been learned, or while they are being learned, pupils should have practice in applying them as the base forms in objects or ornaments; * * * and they should also be used to teach pupils the elementary principles of symmetry and repetition in the arrangement of lines and forms for design. * * *

These principles of symmetry and repetition are to be observed as characteristics of natural forms, and are found in leaves, flowers, etc., and are also elementary principles in all good design for industrial purposes. By introducing geometric diagrams of simple objects (that is, drawing objects without perspective effect), and by arranging ornamental forms to teach symmetry and repetition, a wide variety of practical exercises can be secured for a Primary course of three or four years, which will not only give good practice in mere drawing, but at the same time lay the foundation for a broad course of instruction in Grammar Schools.

GRAMMAR COURSE.

With the geometric facts of form well learned in the Primary Schools, and with some practice in tracing their application in objects and ornament, together with having been taught the elementary principles of symmetry and repetition in design, pupils in the Grammar Schools are prepared to pursue a pretty broad and practical course of instruction in drawing as applied—

In designs for flat surfaces;
In the representation of solid forms or objects;
In the construction of industrial objects.

I will endeavor to illustrate what is meant by each of these features.

DRAWING FOR DESIGN.

First. *Designs for flat surfaces.*—If we look carefully at the designs on wall papers, carpets, muslins, porcelain, glassware, wood-work, stone-work, iron-work,—in short, if we study the design which we find on nearly every industrial article, we observe that it is either geometric in character,—that is, made of geometric forms,—or that it is a composition of natural forms, such as leaves, flowers, figures, etc., or a combination of both geometric forms and conventionalized natural forms. The best designs are produced by the last arrangement,—a proper combination of geometric forms and conventionalized natural forms.

Such being the practical features in design, drawing in Grammar Schools, so far as it relates to this subject, should embrace instruction in—

Geometry as a base for construction and arrangement—

Symmetry, Repetition, Alternation, and Proportion taught as principles in the use of forms—

Leaves, flowers, etc., studied in their natural arrangement of shape and growth, and conventionalized for units and motives in design.

When these features which relate to the creation of designs by pupils have been provided for, good examples of historic design, such as are to be found in the Greek, Roman, Moorish, and Gothic styles, should also be given to teach good taste in this subject. In other words, when pupils have been taught the elementary principles which govern the construction of designs, they should then have practice in studying examples of good designs, that they may put their knowledge to the best use.

* * *

We begin with this feature in the Grammar school because the first exercises can be made simple, and can be so arranged as to give good practice in mere hand skill in drawing. At the same time the general elementary principles in the arrangement of forms can be clearly set forth and explained.

OBJECT DRAWING.

Instruction in design should be pursued throughout the Grammar course.

Second. *Representation of solid forms or objects.*—In a practical course in drawing for Grammar schools, the next step should be to teach the application of drawing to the representation of solid forms, and this subject can be properly introduced in the fifth school year, or the second year of the Grammar course. In the design subject, it will be observed that the drawing consisted of representing forms in two dimensions only,—length and breadth. In this subject a fresh difficulty is encountered: the representation of forms which have three dimensions,—length, breadth, and thickness; in other words, solidity. In drawing the plane geometric forms, we have *facts* of the forms to deal with. In drawing solid forms, we have these *facts* modified by their appearance when placed in different positions with regard to the eye, * * *.

LOGICAL ARRANGEMENT OF DRAWING COURSES DESIRABLE.

I cannot dwell too strongly on this point, because it is one of the fatal mistakes in nearly all courses of instruction in drawing that it is not properly presented. I do not think it necessary to stop and explain to you that the true logical order of instruction here should be to teach the fact first and the appearance afterward, because the simplest knowledge of educational methods teaches us that we should always, in every study, progress from the simple to the more complex features; and it requires only the application of a little common sense to see that the order of growth or of progress in teaching the drawing of objects is to acquaint pupils first with the facts of the forms themselves, and next with the modifications these facts undergo when they appear to the eye.

Now please observe that in the Primary schools we teach the elementary *facts* of these forms in the figures of plane geometry. In the design-feature we continue the use of these forms as a base in that work, thus familiarizing the pupils with them. In the object drawing we begin by taking these familiar facts, and by adding another dimension to them—thickness—we get solidity, or solid forms. Now, there is no position in which you can get a view of any solid form, giving its length, breadth, and thickness, and have the facts of these three features perceived by the eye, unmodified in their appearance.

HOW "FACTS OF FORMS" MAY BE TAUGHT.

Consequently, object drawing, which is the representation of *facts* of forms as they *appear*, should be based upon a knowledge of *facts* of forms as they are, otherwise such work is mere guess-work.

So much being granted, we come now to the arrangement of exercises with which to teach this subject in Grammar schools. As we saw that the forms of plane geometry were the basis of all surface forms, we have but to add another dimension—thickness—to those forms to produce a group of solid forms, which will serve as an educational basis for nearly all solid forms whatsoever.

In the solid forms, therefore, of the cone, sphere. cylinder, cube, rectangular block, triangular prisim, pyramids, etc., * * * comprising about twenty solids in all, we have such a group of forms; and if, therefore, we can teach pupils the facts of these forms, and the modifications these facts undergo when viewed from above, below, from the right or left, we shall have prepared them to represent in an intelligent way any object similar to these forms which they may see. * * * .

In these elementary exercises, the drawing of the outlines of the forms is sufficient to teach the principles which govern the facts and their appearance; and moreover, the drawing of these outlines in bold lines is the best possible practice for developing hand skill in drawing. Instruction in this feature should make use of drawing from both printed copies and from the objects or solids themselves; but drawing from printed copies should precede drawing from the solid forms. as the principles involved are more easily explained by the use of copies than by the use of solids alone.

DRAWING FOR CONSTRUCTION.

Third. *Construction of industrial objects.*—I come now to the third subject of drawing in the Grammar course, that subject which relates to the construction of objects. The aim should be to teach practical drawing,—that is, industrial drawing; drawing as applied in the industrial arts. We have seen that geometry is the basis of all forms, and we have noted its applications in industrial designs, and have also seen that it forms the basis for the intelligent drawing of objects as they appear to the eye. But objects before they can be represented, before they can be decorated, must be created, must be constructed; and as drawing is the only language used in their construction, any course of instruction, to be practical, *to be industrial,* must embody the constructive feature as one of the main elements in it.

INSTRUMENTAL DRAWING.

In the arrangement of the instruction for the Grammar course there should be introduced in the sixth school year, or about the middle of the course, what is called geometrical drawing; that is, drawing problems in plane geometry with the use of instruments. These problems find applications in the accurate construction and subdivision of the geometric figures for design, as well as in all kinds of constructive work, such as machinery, building construction, masonry, pattern-making, etc. As in these applications the greatest possible accuracy is required, and as this accuracy can be secured by no other means than by geometrical drawing, its great and paramount importance will, I trust, be apparent. Indeed, I will go so far as to say that if this subject be left out of a course of instruction, if it be not regarded from the first as fundamental, if all the other subjects be not arranged as subsidiary or complementary to it, such a scheme can have no broad claim to recognition in public schools.

This may seem a strong and perhaps a fanatical statement; but I shall fail of my present purpose if I do not make this point clear before I close, * * * . We begin by such simple problems as the bisecting of lines; the erecting of lines perpendicular to others; making angles equal to given angles; on a given base to make a pentagon or hexagon, etc.; within a square to draw four semi-circles, each touching one side of the square, and their diameters forming a square; and others of similar nature. In short, there is no requirement in the construction of any object, building, or machine which cannot be expressed by a geometric problem. Now, if you will please bear in mind that this is accurate work, that by the use of instruments the geometric forms or facts (which I have shown are the basis for the design and representative work) can be accurately constructed, you see that from the point where this subject is introduced, work in the other subjects will be greatly improved.

You will note that these geometric problems *are facts*, but facts in length and breadth only. Objects, however, have thickness,—solidity or depth. In making solid objects, such as furniture, machinery, buildings, etc., how do we convey the idea of the solidity or depth of the thing to be made? By a very simple means: by giving two geometric views of the object,—one view of the object with the eye placed directly in front of it, so as to give the facts of its length and breath, and another view with the eye placed directly above it, so as to give a geometric view of the facts of the thickness or the other dimension. * * * .

THE NECESSARY PRECISION OF DRAWINGS FOR CONSTRUCTION.

Now I wish to call your attention to this: that constructive drawings are all expressions of *facts* about the objects to be created, and have nothing to do with the *appearance* of the objects; furthermore, that they are of the most accurate and precise nature; and that were it not for such drawings, were it not that there are people trained to make such drawings and others trained to read them, it would not be possible to construct such buildings, such machinery, such furniture, such bridges as we now have for our comfort and convenience.

It cannot be expected that elaborate constructive drawings will be made in Grammar schools. In this grade, only the elementary principles of such work can be presented; enough to enable pupils who leave the schools at this period to understand how drawings for the construction of industrial objects are made, and how to read them.

HOW DRAWING IN SCHOOL IS TO HELP FUTURE MECHANICS AND ARTISANS.

As the features of the study which are taught in the Grammar schools are the only features which the great mass of our future mechanics and artisans now in these schools will ever enjoy, permit me to trespass on your patience a moment while I turn back and show that these different subjects of Grammar-school work are but parts of an industrial, practical whole, and that the outcome of the Grammar instruction should be a complete welding of these subjects together, so far as they have been pursued.

We have seen that instruction in drawing relates, so far as its industrial applications go, to giving *facts* and the *appearance* of the facts, and also of teaching the principles of good design. Following this line of exposition, we have seen that it leads us to the principles involved in the creation of all objects as fundamental to their correct representation. But I fancy some of you may say, We see the points you make in favor of the constructive and representative subjects, but we fail to see the importance of the design subject—at least we fail to see why it should be made so prominent all through the course. My reply is that the basis of drawing being so precise, so mechanical, you must leave some opening whereby the taste for beauty can come in; for you must remember that the success of industrial enterprises, especially in all the higher departments, often depends upon whether or no the articles made are attractive in appearance; furthermore, before we can have any wide-spread development of industrial taste in our industries, we must have a public taste to appreciate such creations when made: hence industrial design, both for producer and consumer, should form a fundamental feature in industrial drawing. Important claims might also be made for design on educational grounds.

So much being understood, let us now see what the practical outcome of the instruction thus far given is.

THE PURPOSE OF THE GRAMMAR SCHOOL COURSE OF DRAWING.

To sum up the Grammar course in a word, it should apply the instruction in drawing to teaching the elements of industrial construction, to teaching the elements of representing objects, and to teaching the elements of good industrial design, to the end that pupils may be prepared to engage in the various occupations connected with the industrial employments.

* * * It is not intended or believed that pupils who pursue drawing through the Grammar course will be prepared for practical designing or be able to make a greater use of the knowledge of drawing in industrial occupations than pupils who go from such schools into mercantile life make of their reading, writing, and arithmetic. It is not expected that this instruction will make them artists, designers, or constructing engineers. But this much is claimed; that they will be able to read the drawings of designers, engineers, and artists, when made, and in a great measure understand and appreciate them; and thus be prepared for intelligent and skilled labor in those occupations in which the workman receives his directions wholly from drawings.

HIGH SCHOOL COURSE.

Having shown that the course of instruction for Primary and Grammar schools should develop through the different classes of those schools according to a plan which begins very simply in the Primary classes and gradually unfolds through the Grammar grades to a definite and practical end, I now turn to the course for the High schools, which is but the continued unfolding of the principles started in the Grammar course, under more complex conditions and for more complex applications.

In the Grammar course we have been dealing with—
(*a*) Facts of form for creative purposes;
(*b*) The modifications the facts undergo when viewed by the eye;
(*c*) Design for enhancing values and for developing public taste.

I propose now to continue the exposition through the High-school course, under the same general divisions of Design, Representation, and Construction; but I shall reverse the order of presentation, and in this course take up the constructive subject first, as fundamentally more important.

DRAWINGS FOR CONSTRUCTION.

Construction of Industrial Objects.—In presenting this subject in the Grammar course, I characterized it as the fundamental one in the whole scheme. Notwithstanding the many fascinations which we shall find attaching to the other subjects as they develop through this course, I trust to make clear to you that this subject possesses attractions for the exercise of every healthy mind hardly second to those of either of the others.

In the lower course owing to the immaturity of pupils' minds and the limitations of time which surround the study, only very elementary practice in this study could be given, just enough to enable pupils to read elementary constructive drawings and to start them in the right direction for further study. In this course, however, this subject can be developed so as to lead to broad practical knowledge in many directions.

It is not necessary that I should enter into all the details. I will therefore indicate its general outlines. Referring to the Grammar course, it will be remembered that some simple problems in plane geometry and also a few problems in solid geometry were given to indicate how drawings were prepared for constructive purposes, and how pupils might be taught to read such drawings. In the High-School course the number of problems in both these elements is largely increased. The nature of these problems I presume you understand. They are infinite in their variety and scope. I will only remark, if I may misuse a term, that such is the flexibility of plane geometry, that on any given surface there can be drawn accurately any form that may be desired. Problems in plane geometry, therefore, may be regarded as parts of speech, so to speak, in the language of construction. The problems in solid geometry are not less subtile. They deal with the complete facts of forms; and making use of various planes of projection, they enable a draughtsman to represent with absolute accuracy, any sold form in any position, and even to pierce it or to intersect it with any other form in any direction desired. A knowledge of plane and solid geometry, therefore, enables the constructive designer to represent, with the utmost accuracy, any fact of form in any position which can be conceived. It is also the language used to convey ideas of mechanical motion, so that it may be said that geometry in its plane and solid features is the very life or language of all industrial construction. One step further just here: not only by geometry can we describe the facts of form as they are, but we can also get at the actual effect, on these forms, of light and shadow; for, given the exact form of an object, given the condition under which light falls upon its surface, the shadow can be determined with as much exactness as the facts of the forms themselves. But in industrial creations, shadow or shade on surface is not at all necessary. * * *.

The value of drawing applied to such constructive purposes I need not dwell upon. In the course of study I am now outlining for High Schools, the preparation of pupils to do intelligent work in these directions is one of the main objects in view, and good results can be easily obtained.

OBJECT DRAWING.

Representation of solid forms or objects.—In taking up this subject in the High-School course, we proceed to put its elements on a rigidly scientific basis. This leads us to another stage of difficulty,—scientific perspective, which is introduced into the lower classes of High Schools.

THE STUDY OF SCIENTIFIC PERSPECTIVE.

Perspective.—I need not dwell upon perspective drawing as a feature; you know that it is the science of representing any form under any conditions in which it may be viewed.

In constructive drawing we have seen that by the use of geometry we can get at all the facts of form; by perspective we can get at all the facts of the *appearance* of these forms with equal exactness. As we increase the complexity of the facts of form, we also increase the difficulties in representing such facts. Hence the use of perspective drawing is to give the law to the *representation* of the facts of form; in other words, we produce a *picture* of the forms themselves, and here we approach the domain of art in its highest sense. * * *

THE STUDY OF LIGHT AND SHADE.

Light and shade.—Another difficulty is encountered in our progress toward representing objects as they appear,—depicting the effect of light and shade on their surface. In our progress in drawing from objects as they appear to the eye, we approach here a new stage of difficulty, requiring greater maturity of mind; and we have again to call our science to our aid to prevent going astray. If we place an object where predominating rays of light fall upon it, we all know that certain portions of the surface will show a much greater degree of light than others; but to discriminate between the different degrees of light and shade requires a well-trained eye and well-developed powers of perception, based on a knowledge of *facts* and their *appearance*.

Without going into details on this point, I will say that the facts of shade and shadow are so well understood, that, given an object, and given the angle of incidence of the light falling upon it, the shadow can be projected with mathematical certainty, and the shade determined with approximate accuracy. I am aware that in drawing from natural forms or objects we do not always have the control of the light; all the more necessary is it, therefore, that the scientific laws of shadows should be understood, in order to arrive at sound conclusions in regard to the predominating effect. Drawing in light and shade should be practised principally from objects, should follow practise in outline drawing and the study of perspective, and is the next step to working in color. * * *

COLOR AS APPLIED TO INDUSTRIAL DESIGN.

The Study of Color.—I will not stop to give details in this feature, further than to remark that even in its elementary stages many new difficulties are encountered; and before any study of it can be of practical value in representative drawing, the preceding stages of object drawing, such as drawing objects in out line, perspective, and in light and shade, should be well mastered. I may remark in passing, that there are certain scientific principles which govern the proper use of colors, more subtile perhaps in their nature than are to be found in any of the other features we have been considering, and a knowledge of which is fundamental for the production of harmony in their use. As it is not intended in public schools to fit pupils to become artists; this feature should not be pursued solely as a preparation for its practice in fine art, but mainly to prepare pupils for its application in industrial design. As there is no line of demarcation between the higher phases of industrial art and fine art, the preparation for the former is no detriment to the pursuit of the latter. * * *

THE FOUR PROGRESSIVE STAGES OF INDUSTRIAL DRAWING.

Representative drawing for industrial purposes, therefore, may be said to consist of four stages:—

1st. The geometric facts of forms.

2d. Perspective, or the laws which govern the representation of the outlines of these forms when viewed by the eye.

3d. The appearance of the surface of these forms under the effect of light and shade.

4th. Their appearance under the effect of light, shade, and color. * * *

Practical Industrial Design.—Passing now to the subject of design in the High-School course, I will ask you to observe that we left the subject in the Grammar course developed to the point of making designs in outline for flat surfaces. In the High-School course, by the introduction of the features of perspective, light and shade and color, this subject is materially widened so as to include nearly all kinds of sculptured or relief ornament, as well as ornament for flat surfaces, and ends in designs adopted for practical purposes in all the leading industries,—for carpets, wall papers, porcelains, furniture, wood and stone carving, iron-work, etc., etc.

THE HIGH SCHOOL COURSE OF DRAWING TRAINS THE ÆSTHETIC FACULTIES.

The charge is frequently made against such a course of instruction as I am describing, that it is too mechanical in its nature, and does not give sufficient scope to the æsthetic faculties. I fancy no one will come to such a conclusion after an attentive study of the treatment of this subject of design, both in its several stages of development and in its relation to the other subjects of construction and representation. Observe the elements which enter into its practice in this High-School course. Pupils having secured a knowledge of plane geometry to aid them in constructing these forms and arranging their units, have now given them plant forms to be studied both in form and color as *motives* for design; and then, above all, instruction is given in historic ornament from choice examples, illustrating the principles which underlie the great historic styles of decoration of the past,—the Greek, Roman, Byzantine, Gothic, Moorish styles, etc.,—for the purpose of developing their taste for what is refined and beautiful in design. * * *

This subject of design is essentially the æsthetic feature in the scheme; and mingled as it is with the other features of the course of instruction, it does not come in as an exceptional element, but rather as a controlling influence on the whole,—an influence by which skilled labor in construction is consecrated to use and to beauty.

I regret that I have not the time to enlarge upon this subject and to point out the æsthetic influences to be found in the study of plant forms and historic ornament which the course prescribes. To do justice to either of these features would require a paper by itself. I must content myself, therefore, by simply calling attention to their distinct recognition and to their importance.

PURPOSES OF THE HIGH SCHOOL COURSE OF DRAWING SUMMARIZED.

To sum up this High-School course, we have drawing applied—

First, to all industrial construction,—a preparation for intelligent work in building and machine construction of all kinds.

Second, to the representation of objects as they appear under the effect of light, shade, and color.

Third, to practical industrial design, to enhance the value of industrial construction. * * *

THE VALUE OF THE WHOLE PUBLIC SCHOOL COURSE OF DRAWING FROM THE PRIMARY TO THE HIGH SCHOOLS.

Surveying this course of instruction as a whole, noting its beginning with simple facts of form in the Primary school, tracing the development of their application in the subjects of design, representative and constructive drawing in the Grammar schools as a preparation for the practical life of workmen in the workshop, and observing the still more comprehensive development in High schools, until the instruction reaches results which prepare directly for a high degree of intelligent constructive power in all the building and mechanical employments, and at the same time for a practical knowledge of, and a refined taste in, design for nearly all industrial purposes: it will be seen that a course of instruction in drawing has been arranged of a practical nature, and so comprehensive in its scope and character as to remedy in a measure one of the most serious defects in our schemes of public education,—the want of proper educational wage-earning training for our artisan and designers,—and at the same time provide for the cultivation among our people of a knowledge of science and art in their applications to industry.

One of the most frequent charges brought against our public schools is that they do not sufficiently prepare for the needs of our mechanics and artisans, when in fact three-quarters of the pupils in the schools are from these classes and will ultimately find their employment in the industrial occupations. Drawing is the main language used in industrial design and for the direction of industrial labor. There can be no high degree of industrial design or of skilled and tasteful industrial labor without a knowledge of drawing as applied in the industrial arts; and in the course of study which I have outlined before you, I have endeavored to give the important features which characterize the instruction in this branch of study now being given in the public schools of Massachusetts. Whether or no this be practical knowledge, I leave you to decide; but I venture the opinion, that if you study attentively the practical needs of the pupils in your public schools destined for the industrial employments, and consider their educational needs in connection with their future wage-earning power in such employments, you will find that drawing should form one of the fundamental elements in their education, and that too on the general plan here given.

Issues of the most serious import—social, political, and industrial—are dependent upon the proper treatment of this subject of industrial Art education in our public schools, and I bespeak for it therefore your most attentive consideration.

V.

THE INDUSTRIAL ART TEACHERS' ASSOCIATION OF MASSACHUSETTS.

INTRODUCTION.

A brief account of this interesting association of art educators was given in Part I of this Report. (See Part I, pages 200, 201.)

The annual meetings have been continued and the precedent set at the first meeting by the reading of the admirable paper by Miss Hoyt, subsequently published by the Association, has been faithfully followed. Valuable papers have been read and discussed at each meeting, and several of the papers have been published by the Association.

I am indebted to the courtesy of Mr. George E. Morris, Secretary and Treasurer of the Association, for copies of the programmes of these meetings and of some of the published papers. The programmes of the proceedings at the annual meetings, which follow, show in brief the trend of thought among those who are actively engaged in teaching drawing in the public schools. The programme of the first annual convention is given in Part I, pages 200, 201 of this Report.

PROGRAMMES OF ANNUAL MEETINGS OF THE INDUSTRIAL ASSOCIATION OF MASSACHUSETTS.

SECOND ANNUAL MEETING. BOSTON, THURSDAY, DECEMBER 27, 1883.

[Art Club Rooms, Dartmouth, corner Newberry street.]

PROGRAMME.

10 a. m. Opening Exercises and Appointment of Committees.
The Teaching of Drawing in High Schools. By Miss Clara Webster.
The Desirability of Teaching Scientific Perspective in Day Schools. By Mr. E. C. Colby.
2.30 p. m. The Teaching of Design in Day Schools. By Mr. Henry Hitchings.
Recess.
Reports of Committees and Election of Officers.

THIRD ANNUAL MEETING. BOSTON, SATURDAY, DECEMBER 27, 1884.

PROGRAMME.

9.30 a. m. Opening Exercises and Appointment of Committees.
10 a. m. "Influence of the Study of Drawing in the Development of Character." By Miss Adeline V. Pond.
Discussion.
Recess.

10. a. m. "What will be the Practical Outcome of the Present Teaching of Design in our Public Schools?" By Miss Mercy A. Bailey.
Discussion.
2 p. m. Reports of Committees and Election of Officers.
"Judgment in Matters of Taste." By Mr. Charles C. Perkins.

Fourth Annual Meeting. Boston, Tuesday, December 29, 1885.

PROGRAMME.

9.30 a. m. Opening Exercises and Appointment of Committees.
"The Study of Design in Connection with that of Historic Ornament." By Mr. Henry T. Bailey.
Discussion.
Recess.
"The Necessity of the Presentation of the Subject of Drawing in Conformance with Educational Methods." By Mr. Walter S. Perry.
Discussion.
2.00 p. m. Reports of Committees and Election of Officers.
"Principles of Art."

Fifth Annual Meeting. Boston, Tuesday, December 28, 1886.

[Art Club Gallery, Dartmouth, corner Newberry street.]

PROGRAMME.

Morning:
9.30–10.00. Opening Exercises and Appointment of Committees.
10.00–10.10. "Form Study the First Two Primary Years." Miss A. L. Balch, Director of Drawing in Public Schools, Cambridge.
10.10–10.20. "The Study of Proportion in Representation." Miss L. E. Fay, Director of Drawing in Public Schools, Springfield.
10.20–11.00. Discussion.
11.00–11.15. Recess.
11.15–11.35. "The Necessity of Well Trained Teachers of Industrial Drawing." Mr. Geo. E. Morris, Director of Drawing in Public Schools, Waltham.
11.35–11.55. Discussion.
11.55–12.15. "The Use that can be Made of Form Study in General." Miss A. M. White, Director of Drawing in Public Schools, Nashua, N. H.
12.15–12.30. Discussion.
Afternoon:
2.00–2.30. Reports of Committees and Election of Officers.
2.30–3.00. Design. Mr. G. H. Bartlett, Principal of Massachusetts Normal Art School.
3.00–3.30. Normal School Work. Miss L. A. Herrick, Salem Normal School; Miss L. M. Field, Framingham Normal School.
3.30–4.00. Discussion.

At a meeting of the Executive Committee, held October 20th, it was decided that the exercises should consist in part of general discussions of topics of interest.

Those desirous of having any questions discussed should submit the same to the President.

Anson K. Cross, *Secretary.*

Sixth Annual Meeting. Saturday, January 7, 1888.

[Normal Art School Building, corner Newbury and Exeter streets, Boston.]

PROGRAMME.

Morning:
9.30–10.00. Opening Exercises and Appointment of Committees.
10.00–10.30. The Difficulty of Teaching Model Drawing and Building Construction in High Schools. By Mr. Walter F. Brackett, Teacher in Massachusetts Normal Art School.
Discussion.

Morning:
11.15–11.35. Color in the Public Schools. By Miss L. E. Fay, Director of Drawing in Public Schools, Springfield, Massachusetts.
Discussion.
Afternoon:
2.00–2.30. Reports of Committees and Election of Officers.
2.30–3.00. The Use of Clay in the Public Schools. By Hon. J. W. Dickinson, Secretary of the State Board of Education.
Discussion.
3.30–4.00. Illustrative Drawing—Its Use in Teaching. By Miss W. Bertha Hintz, Teacher of Drawing, Girls' Normal School, Boston.

A "question box" will be placed for the convenience of those who wish to have questions answered or discussed.

All teachers of Industrial Drawing are cordially invited to become members of this Association.

G. H. Bartlett,
President.
Geo. E. Morris,
Secretary aud Treasurer, Waltham, Mass.

The following report of this meeting appeared in the Boston Herald of January 8, 1888:

*DEMONSTRATORS OF INDUSTRY.**

SIXTH ANNUAL MEETING OF THE INDUSTRIAL ART TEACHERS' ASSOCIATION.

The Industrial Art Teachers' Association is an organization, formed without regard to locality, of the numerous demonstrators of the industrial arts that make up its membership, and yet, for the most part, though, they are teachers within the precincts of New England. The annual meetings are always productive of great interest, and it is no exaggeration to state that the sixth annual gathering, which occurred Saturday last at the new normal art school building, corner of Newbury and Exeter streets, was by far the most interesting one held in the history of the association. President George H. Bartlett began the exercises with a felicitous address, after which the records were read and the treasurer's report presented. There is a small balance in the treasury.

These committees were appointed: On nominations, Miss D.L. Hoyt, Mr. A. K. Cross aud Miss L. E. Fay; on membership, Mr. W. F. Judkins, Miss Jessie W. Prince and Miss Clara Balch. Nine new members were elected. Mr. Walter F. Brackett, teacher in the Massachusetts normal art school, opened the exercises proper of the day in the reading of an exhaustive paper on "The Difficulty of Teaching Model Drawing and Building Construction in High Schools." Mr. Brackett's views in an abstract form were that some of the difficulties were: Insufficient accommodations for the proper study of model drawing; indisposition on the part of school committees to furnish the proper accommodations. Mr. Brackett favored the utilization of instrumental perspective. Referring to building construction in high schools, Mr. Brackett held that a principal difficulty lies in

THE LACK OF KNOWLEDGE

on the part of teachers, advised the use of simple names of parts of objects in construction, and concluded by recommending isometric drawing of joints as being valuable, and as producing better results. The discussion following the reading of this paper was very general, and called for views pro and con from Dr. A. A. Miner, chairman of the state board of education; Mrs. H. J. Carter, Miss Hurlbut, Mr. George E. Woodman, Mrs. Hicks, Miss L. E. Fay, Miss Fanny M. Smith, President Bartlett and Instructor of Drawing Hitchings of the Boston public schools.

Miss L. E. Fay, director of drawing in the public schools at Springfield, next offered a paper on "Color in the Public Schools." Miss Fay took up first primary colors, and afterwards primary colors in combination giving secondary colors. She next referred to the observation of tints in juxtaposition with various colors, and concluded her able essay by alluding to the development or enforcement of colors complementary to each other. Miss Fay illustrated her views with colored diagrams. Her paper was discussed by Mrs. Carter, Miss Fanny M. Smith, Miss Hurlbut, Mr. H. T. Bailey, Miss White, Mrs. Charles H. Ames, Miss Field, Instructor Hitchings and Mr. George E. Morris, the secretary-treasurer of the association. It was now noontime, and the association adjourned for two hours for dinner. Upon reconvening, the association listened to the report of the nominating committee, which recommended the election of the old list of officers.

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* Sunday Herald, Boston, Mass,, Jan. 8, 1888.

"The Use of Clay in the the Public Schools" was the next paper's subject, and it was offered by Secretary J. W. Dickinson of the state board of education. It was his belief that a proper method of thinking and acting should be instilled and a discipline of faculties in the acquirement of knowledge. Briefly he would recommend the teaching of objects as wholes, proceeding to parts. Secretary Dickinson's paper showed that he was strongly in favor of enforcing the value of teaching by

THE ANALYTICAL SYSTEM.

He gave drawing a very exalted position as a means of general ednecation. The discussion of Mr. Dickinson's themes was quite lengthy, and these teachers talked them over: Mr. Hitchings, Mrs. Hicks, Miss Kate E. Shattuck, Mrs. Carter, Miss White, Miss Fay and Mr. Woodman.

The pearl of the afternoon session was reserved for the last feature of the programme. Its title was "Illustrative Drawing—Its Use in Teaching." Miss W. Bertha Hintz, teacher of drawing in the girls' normal school, was the demonstrator. A more delightfully instructive presentation of object teaching it would be hard to conceive. In an off-hand, deliciously well-rounded "talk," that fairly scintillated with mots of the brightest kind, Miss Hintz presented her views, at the same time continuing to draw extremely artistic sketches, such as "A walk in the woods," exemplifying the tour of a couple of pupils and their teacher through pretty fields of grass; through avenues of stately shade-giving trees; a look at old ocean from the bluff of a tall promontory, with ships grown diminutive because so near the horizon. A bewildering variety of objects were sketched hastily by Miss Hintz, and with strangely picturesque and truthful effect. Her cleverness was quickly recognized by her confreres, who applauded most rapturously at the finish of this bright and sparkling exposition. The meeting then adjourned.

At a meeting of the officers held March 27, 1888, it was decided to publish the papers read by Miss Fay and by Mr. Dickinson. Besides the paper read at the first meeting by Miss Hoyt, the papers read at the meeting in 1884 by Miss Adeline Valentine Pond, on "Influence of the Study of Drawing in the Development of Character," and that read in 1885 by Dr. Paul Carus on "The Principles of Art from the standpoint of Monism and Meliorism," have been published by the Association.

From the paper by Miss Pond, who, it will be seen, seriously appreciates the power of the public school teacher as a molder of character, a shaper of the coming men and women who make the state, the following extracts are taken, which show by delicate, discriminating touches, the practical every-day influences exerted by this study, and are vital with living illustrations and quaint applications.

INFLUENCE OF THE STUDY OF DRAWING IN THE DEVELOPMENT OF CHARACTER.[*]

By Adeline Valentine Pond.

It is a long word you have there, that word character—a long word and a broad one; a word that covers much ground, and by reason of elasticity, may be stretched to cover much more. You and I, who are nothing if not orthodox, may hold that a man's character begins and ends with his morals; while our neighbors, who are nothing if not liberal, may believe that it includes his intellect as well. * * *

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[*] "Influence of the Study of Drawing in the Development of Character. Paper read before the Industrial Art Teachers' Association, at the Boston Art Club Gallery, Saturday, December 27, 1884, by Adeline Valentine Pond, Teacher of Drawing in Newton Public Schools. Printed by vote of the Association. Pp. 12."

The strongest molding influences of our day lie in the public schools. The teacher, far above men of other callings, has an opportunity for shaping many characters besides his own. Like the potter at the wheel, his smallest motion is not in vain; his lightest touch must tell. Every study that the teacher opens up to his pupils carries the molding steadily forward.

> "This clay, well-mixed with marl and sand,
> Follows the motions of my hand,
> For some must follow and some command,
> Though all are made of clay."

Potent among the educational molding influences stand the three R's; potent, but not omnipotent. Other studies must help: among them drawing. "Reading," saith the philosopher, maketh a full man, conference, a ready man, writing, an exact man." In this later day, what can drawing do? Properly studied, it can benefit the child physically, mentally, morally. It can help to make a man of him. After all, it is a poor study that never saved a soul, and never even helped.

HOW DRAWING EDUCATES EYE AND HAND.

In the first place to speak briefly of physical effects, drawing benefits the body by training both eye and hand, the one to see, the other to do." * * * "In object drawing, a full knowledge of the construction must be supplemented by a full knowledge of the laws of appearances. In such drawing, therefore, the eye is educated, first, to see things as they are; next, as they seem; and last, to see the difference between being and seeming. Again, drawing trains the hand to obey the will. An important point truly; for fancy a republic wherein certain of the members, either through ignorance or malice, continually fail to work out the plans of the lawfully appointed powers. What else but confusion can possibly result? Similar anarchy reigns in the kingdom of the mind, when the bodily members, through lack of discipline, fail to obey their natural sovereign. In the untrained hand there is often inability to obey, often disinclination; but drawing changes all that; and drawing does something else for the hand. There is yet another true service that deserves mention. Those who despise not the day of small things, those who have faith that cleanliness is akin to godliness, will not smile when, in serious vein, I respectfully refer to the study of drawing as a powerful cleansing agent. It happens thus: In schools where such admonition is necessary, the pupils are instructed to bring their very cleanest hands on drawing days. No stain must mar the pristine purity of their drawing books, lest the special teacher behold the same, and wax wroth thereat. Children are quick to comprehend incongruities; they understand something of the "eternal fitness of things," and perceive that it is not borne out by a combination of clean paper and grimy fingers. In certain districts where once the dirt of the child was the despair of the teacher, I learn that now cleanliness, or at least that partial cleanliness superinduced by the study of drawing, is fast becoming popular. What a glorious victory is this! We have met the enemy, and he is ours for the time being.

HOW THE STUDY OF DRAWING DEVELOPES THE INTELLECT.

But in considering the influence of drawing in the development of character, the mere physical effects of the study are by no means chief. What can drawing do for the mind?

Taught aright it develops the faculty of reason, the arbiter between right and wrong. The truths of form should not be forced upon the pupil in so many pellets. If a child asks a question do not fire upon him with a formula. Lead him to speak what he thinks. Thought gives rise to speech, and speech by a curious reflex action, reforms and strenghtens thought, so that the outlines of the mental image become clearer and purer. A little boy in the baby class said to me, with all the ardor and communicativeness of five years and kilt skirts, "I've tested my horizontal line, and it's just as long as the vertical; but when I test my vertical it isn't as long as the horizontal." The very instant that he had finished speaking, the child saw that there was a flaw somewhere, and added quickly, "But I guess I didn't do it right." Silence is not always golden; if speech will lead to thought, give us speech.

Better, sometimes, a child who thinks for himself, and so thinks wrong, than one who thinks by proxy, and so thinks right.

Mistakes are not always failures; they are often incident to the natural growth of things. A child cannot, like the fabled beanstalk, grow up in a single night. If he could, he would be but a beanstalk after all, and a monstrosity among beanstalks at that. Let him make his mistakes if he will but grow thereby.

A boy of eight listened eagerly to a talk about the circle; but when I stated that a circle may have any number of radii, he rose to object. "Because," said he, "you can take a wheel and put in a lot of spokes, and then a lot more, and by and by there won't be any room left." Now the child, though right about the wheel, was wrong about the circle; but what he said showed that he had used his reason. "Young man," thought I, "the study of drawing is converting you into a highly civilized product; you have evidently either acquired or inherited the noble art of mastication."

DRAWING AIDS CONCENTRATION OF THOUGHT.

Another excellent mental effect resulting from the study of drawing, is the habit of concentration. Human nature is lazy; human children are dreamy. With many, lounging is a customary mental attitude. To all appearances your dreamers are with you in the flesh; but in the spirit they are anywhere except upon the spot. Shall we let these children grow up to join the ignoble army of incurable incompetents, people who are reputed to be "no one's enemies but their own," who "never intended any harm," who "who didn't know 'twas loaded?" No; save them from such a fate. Teach them that the day is for doing, not dreaming; for doing the right thing, in the right way, at the right time, and in the right place. With a certain amiable relentlessness, give them as a tonic dictation exercises in drawing. Each syllable that you utter has its own unalterable meaning. Precision and accuracy are demanded. When your fiat has gone forth that the longest vertical is to be trisected, let no one dare understand you to say that the shortest horizontal was to be halved. Such exercises help to place a child's faculties within reach of his fingers; for the real difficulty with your dreamy, inconsequent children is, not that they lack wits, but that they don't know where to find them.

DRAWING STIMULATES THE JUDGMENT.

Again, in the study of drawing the judgment is kept constantly at work. From the time when the child first attempts to find the middle of his slate, and to place thereat his first uncouth vertical line, he must analyze, compare, choose, execute. He cannot draw the simplest plane geometrical figure without comparing width with hight. He must give afterthought as well as forethought. Criticism, the child's own intelligent criticism, is the better part of drawing. Thus his judgment, strengthened by exercise, becomes something more than felicitous guess-work.

DRAWING AROUSES AND FEEDS THE IMAGINATION.

Do we believe that the imagination is worth cultivating? Why not? Let us save ourselves and our children from the unhappy fate of Peter Bell of primrose fame. Drawing stimulates the imaginative faculty. The child's world, that bright and evanescent world of his own creating, teems with imagery and symbolism. The child therefore understands and appreciates the imagery and symbolism of art. He enjoys the truths of form, when they are set about with bright illustrations. If a cylinder were but a cylinder, and a pyramid but a pyramid, it were hard lines indeed. Fortunately, a cylinder is more than a cylinder; it is a huge boiler, a mighty locomotive; it is the sewer of Paris, the tower of Pisa. Likewise a pyramid is more than a pyramid, a thing of faces and edges merely; it is now Egyptian, sunk in the sands of centuries; now Gothic, rising in lofty spires from Cologne Cathredal. The prosaic rhombus is immortalized in church windows. A square is more than a square, and a circle more than a circle. In the one we behold the symbol of uprightness, in the other the emblem of eternity. Nor does our fancy always revel in the musty traditions of the middle ages. Our associations range

> "From grave to gay, from lively to severe."

The circle suggests the material as well as the spiritual. Haply to the child-mind it speaks of Thanksgiving pies and Christmas cakes, with never a possible perspective of nightmare and dyspepsia. * * *.

DRAWING LEADS TO INVENTION.

Hand in hand with the imagination goes her practical sister invention. That children possess some power of invention, is a fact patent to all who have watched them in their work or their play. Listen to them as they try conclusions with each other to see who can construct the most marvelous tale. This power of invention may be turned into a proper and profitable channel by exercises in design or original arrangement. Here, again, the judgment is put at work; for the object is to make new and pleasing combinations of well-known units, rather than to construct abominations of original ugliness. In the design-feature, as in other features of drawing, not the least among the good results sought is this: A power of viewing things as a whole, a cognizance of underlying principles, a subordination of details. It is a great art, that of seeing the framework of affairs. Who are the best artists? They are those who, in drawing the human form, never lose sight of the human skeleton. Who are the greatest statesmen? They are those who look beyond the details of a government, and behold the principles.

THE COMPREHENSIVE INFLUENCE OF THE STUDY OF DRAWING.

To sum up the leading points of mental training, the study of drawing cultivates the reason, the judgment, the power of concentration, the imagination, the invention, and a certain breadth of intellectual view. Are not these the faculties that in the events of every-day life make a man master of the situation? Chief among all is the power of reason, that power whereby man is rendered unique among all created things. Human ingenuity may devise machines to do the work of hands and feet, of eyes and ears; but it may not devise a thinking apparatus. It may annihilate both space and time, but it cannot invent a substitute for brain. And the age demands of the individual other things besides the reasoning power. It calls not only for thought, but for a certain celerity of thought, a knack of emerging in case of an emergency. The inventions of the day are instantaneous and electric in their applications: shall not the man keep pace with his machines? The mental training afforded by drawing quickens the powers in many ways, and is thus of high importance in the development of a useful, practical, every-day character.

Moreover, all this mental training has its moral effect. Far be it from me to say that knowledge is virtue. I only assert that the two are akin. Conversely, ignorance is not vice, but only a near relation. * * * First, since drawing is a feature of industrial education, and indeed the only feature at present fully recognized by our school system, let me in passing say one word about the effect of industrial education on public morals. "Jails and State prisons," said the wise old doctor, "are the complements of school-houses; so many less as you have of the latter, so many more must you have of the former." Criminal statistics of the present day bear witness to this truth. * * *

SHOOL HOUSES ARE MORE BEAUTIFUL AND MORE ECONOMICAL THAN JAILS.

From such testimony as this we gather that school-houses are not only more æsthetic than prisons, but more economical. Let us by all means save the public moneys. The study of drawing will help. One pencil will not batter down a penitentiary; but a hundred thousand pencils, with the right power behind them, will help to lawfully remove the cause for the penitentiary. And are dollars and cents all that we have at stake? Are the public moneys all that need to be saved? No, the cry goes forth, "Save the child!" It is echoed from the gin-shop and the jail; it is nailed at the corners of the street. Save the child! Save him to himself and to his country: save him by giving his vacant mind something to think of: save him by giving his idle hands something to do; save him for your own salvation's sake.

> "The child's sob in the silence curses deeper
> Than the strong man in his wrath."

Unless public education comes to the rescue, the vacuum in the child's mind, vacuum always abhorred by nature, will be let out to other parties less responsible than the teachers in the public schools. As in the days of Dr. Watts, Satan still makes his classes sufficiently interesting to draw the otherwise disengaged. So be it. We will beat him on his own ground. We will go farther. Our branches shall be useful as well as interesting. Drawing, for instance, is a paying investment; money in pocket and pay in hand.

But I pretend not here to put in a plea for industrial schools. I merely note in passing the effect of industrial education on the morals of the public; and in particular, the effect of drawing, one of the features of industrial education, on the morals of the individual. We believe that Christian morality is the basis of all teaching. We believe that, since, as we are told, we can eat and drink to the glory of God, we can certainly teach to the same end. We believe that the soul has the chief claim upon our service. Unless subject to mental and moral myopia, we see clearly all this and more.

SERMONS IN DRAWING BOOKS—THE GOSPEL OF NEATNESS AND PERSEVERANCE.

You ask how we can preach the gospel through the study of drawing. Look at this pile of public school drawing-books. Every one of them is a book of sermons. Every page bristles with texts. Take up the first book that comes to hand. According to the legend on the cover, it is the property and handiwork of Richard Smithers. On the first page it is clear that Richard means to make his mark. He sets to work with a stout heart and alas a heavy hand. His zeal exceeds his discretion. If, O Richard, I might preach unto you, my text would be this: That *assuredly biceps is a goodly thing, but brains also have their usefulness, their significance.* How is it with the next page? Better, Richard, better. But what is this that greets my eye from the space opposite? Richard has fallen again. Flushed with his easy victory over the previous lesson, he grows reckless of consequences and wades through graphite to a single defeat. And, shade of Giotto, he calls this tipsy turnip a circle! What have we here? Ah, Richard is himself again, with improvements, that last through several pages. Well done, Richard, but beware of success! "Let him that thinketh he standeth take heed lest he fall." What is this? Fallen indeed, poor Richard, lower than ever; for that long horizontal was never made by hands, unless the hands held a ruler of excellent edge. Ah, my boy, "be sure your sin will find you out." And have you forgotten what is said of him that "loveth and maketh a lie?" But I will not judge thee harshly; it may be a moment of sore temptation with thee. Who knows but that Satan, ever ready "to make the worse appear the better reason," took the form of a ruler, and whispered insidious words in thine ear. Hide thy ruler until thou be strong to gaze unmoved upon its charms, and go thy ways. And what means this mad phantasmagoria of kites, carrots, and cat's-cradles, whirling wildly about a discouraged-looking cuff-button for a center? Will it explode? No, not necessarily; it is an original design. Now I think of it, Richard, thou art the very lad who did most stoutly maintain unto me, in the face of public opinion, that every triangle *has* a vortex; certainly the triangle that includes this design has at least one vortex, if not more than one; in fact the arrangement impresses the beholder as being composed largely of vortex. And here farther on is something else I like not. Why this too evident soiling and moiling and rubbing and scrubbing of most inoffensive paper? My text this time is for teacher as well as scholar: *A little instruction is more to be desired than much India rubber.* Thus we turn over the pages of Richard's book, finding here a victory and there a Waterloo; beholding our hero now at the very pinnacle of industry and self-control, and now plunged into the lowest depths of despair. And perchance, fearing that the last pages may be haunted by another of those phantasmal combinations that Richard calls designs, we furtively close the book and put it far from us.

WHAT A GIRL'S DRAWING BOOK SUGGESTS.

The next in order belongs to his sister Kate. The boy, in this case, has the bolder hand, but the girl has the truer eye. Her lines are exquisitely neat and light; in fact, far too light for the good of her eyesight. To me there is something pathetic in the patient struggle of such children to respond to the teacher's shibboleth of "light lines." Is there not a stray text lurking here—something about the letter that killeth and the spirit that maketh alive? Looking farther on, we see that little Kate does not rise and fall like her more mercurial brother; she has indeed her battles royal with model drawing, as certain exhausted pages do testify, but the temptations of the straight edge are powerless with her. We turn over other books; some of the pages are neat and clean, others soiled, rubbed, crumpled, torn, and even blood-stained. This last, I hasten to add, does not necessarily indicate assault and battery; it simply shows that some unruly urchin has surreptitiously sharpened his pencil with his own jack-knife, and has received a cut for his pains. But what lessons of honesty, industry, obedience, patience, and purity these lessons in drawing suggest! One can almost see the luckless Richard detected in the criminal act of ruling as aforesaid; and one waits to hear whether the exposure is to be followed by a stinging denunciation from the teacher, or rather by a strong and not unkindly plea for honesty.

DRAWING EXEMPLIFIES THE WORTH OF HONEST WORK.

And honesty may be taught by this study in more ways than one. Drawing of itself diffuses an atmosphere of truth. It calls for square dealing and full measure. The facts should be understood with exactness, and expressed with a mingling of exactness and grace. The honesty that pervades true art is not the repulsive honesty of Diogenes, seeking expression in tub and lantern; but it is none the less real for being attractive. Unless heredity hinders, those who breathe an atmosphere of honesty find it easy to be honest.

One of the best of the moral lessons taught by drawing is an appreciation of the beauty and economy of primary accuracy; not accuracy attained by groping and scrambling, but accuracy instantaneous.

* * * * * * *

VALUE OF KNOWING WHEN TO STOP.

Another point gained in connection with the study of drawing is the knowledge when to stop. The art of leaving off is a great art; if it were but duly cultivated by our public speakers, how many sighs and yawns and curses, not loud but deep, might then be avoided! Something of the machine nature attaches to us; having once begun, we seem like the Wandering Jew, impelled by some hidden power to continue indefinitely. A child spends fifteen minutes on a sketch. It is well enough, but he scorns the mediocrity of letting well enough alone, and, if left to his own devices, proceeds to trim, and polish, and add, and subtract, until the drawing grows fairly haggard. Fortunately for the pupil as well as for the drawing, the teacher interposes, and in the process of time, that child learns for himself when to stop. Let us hope that the lesson may abide with him when, in after years, it is his turn to rise and say that although he has not come prepared to take any active part in the exercises, he nevertheless would like to occupy a little of our valuable time in making a few remarks. If, under these trying circumstances, the man stands the test and sits down on time, that teacher of his youth, has not lived in vain; he has been an economist for a future generation; he has spent his time that the time of posterity might be saved.

THE STUDY OF DRAWING ENRICHES THE MIND AND KINDLES THE IMAGINATION.

In one high and important characteristic the study of drawing vies with history, reading, and music; namely, in the power to fill the mind with images at once pleasing and pure. There are more things in a child's fancy than are dreamed of in our philosophy. If these things are pure things, they are the child's chief blessing; if not, a curse. Since the imagination craves food, give it food of a wholesome sort.

Art that is worthy of the name of art is pure in inspiration and suggestion. The best types of historic art and architecture have been types that were consecrated to express the religion of the people. The solemn-thoughted symbolism of the Egyptian abides with us to-day. The Madonna faces that Raphael and Murillo sent down to us have power to charm the wise and the simple, the grey-beard and the child, the Christian and the atheist. And what has been the intellectual and moral character of the world's great artists? Witness Da Vinci, not only painter, but poet, astronomer, geologist; behold Michael Angelo, wonderful in painting and sculpture, and great in literature, architecture, and engineering. Morally, both were above reproach. Art has done great things for these men, even as they have done great things for art. When we consider the rich inheritance we have from them, we can but think of the song of the poet:

> "'Tis only heaven that is given away,
> And only God can be had for the asking."

Surely every thoughtful nation should give its children at least so much of art education as will leave them not quite in utter ignorance as to their birthright, but will rather point them the way to a knowledge of the pure and lasting pleasures of art appreciation.

* * * * * * *

Yet, as art education is no longer compelled at every gate to present its *raison d'être* for a passport, the art educator has no temptation to laud the study of drawing beyond its merits, and no wish to present his plans in any light but the "dry light of the intellect." He prefers that the study shall appear exactly as it is, neither more nor less.

* * * * * * *

Though he has taught (and learned) many a lesson of patience, self-control, and integrity in connection with the study of drawing, he does not, therefore, rashly assert that upon drawing hang all the law and the prophets. Narrowness of spirit is suicidal in the specialist. It is no paradox to say that the specialist should be the broadest of men. The very fact that he has a field of his own should show him that others, too, have their hunting-grounds, perhaps more fair than his. Your drawing teacher believes in other books besides drawing-books, in other teaching besides his own, in other prophets besides himself. He understands the limitations of his subjects, as well as its capabilities; he is aware that drawing, like honor, can not "set to a leg or an arm, or take away the grief of a wound." But he counts it no shame that drawing is not first and greatest of all educational powers. He finds his field sufficiently vast; he sees in it all the work that a life-time may hope for, and does desire other worlds to conquer.

ADELINE VALENTINE POND.

BOSTON, *Dec.* 27, 1884."

The thoughtful paper read before the Association, by Dr. Carus in 1885,* is a very erudite and philosophic essay which might readily have been expanded into a volume, had its author chosen; as he indicates the whole Cosmos of the Arts. The following analytical table of "contents" which prefaces his few pages, will serve to suggest to the reader the wide realm of thought and force, encompassed by his little pamphlet.

INTRODUCTION.

Section 1. Definitions.
Section 2. Etymologies of the words *Art*, *Beautiful*, etc.
Section 3. Subjectivity of Taste.

MONISM IN ART.

Section 4. The Rule of Unity.
Section 5. Causality in Art, with reference to the Incidental and the Supernatural.
Section 6. The Work of Art is a Microcosm.
Section 7. The Beautiful in Art and in Nature.

MELIORISM IN ART.

Section 8. The Human in Art.
Section 9. The Arts of Space and of Time.
Section 10. The Unity of Action in a Drama.
Section 11. The Tragedy, a representation of Meliorism.

CONCLUSION.

Section 12. The ultimate object of Art.

Incidentally, in an interesting criticism on the ghostly episodes in Hamlet, and in Macbeth, he sets himself in such opposition to the Greatest Master of the Drama, as to reveal, at once, his own nationality.

When, however, he elsewhere says that "true art is always suggestive;" he gives the truest test by which works claiming to be works of art are to be measured. His paper, at once concise and comprehensive in its suggestiveness, is not easy to quote from; the above opening analysis and the following final passages which show the serious and ennobling character of the writer's Art Ideals, must here suffice.

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* "The Principles of Art, from the standpoint of Monism and Meliorism. A paper read before the Industrial Art Teachers' Association, at the Boston Art Club Gallery, Tuesday, December 29, 1885, by Dr. Paul Carus. Printed by vote of the Association. Pp. 19."

"CONCLUSION.

Sect. 12. Art is no mere trifling and playing, attractive and charming as its works may be. Its object is grand and serious, and it has no lesser aim than has science.

Art and science both reveal the secrets of nature, but they adopt different methods. While science inquires into the various provinces of nature under the guidance of induction and deduction, art, intuitively grasping the idea of the universe and representing it in single examples, gives a clew to the enigma of the world. With regard to this, the Romans called a poet *vates*, seer or prophet. The poet is a priest of humanity. And, truly, of every real artist and poet one must aver as Goethe makes Wilhelm Meister say about Shakespeare, "It is as though he recalled all the secrets of life, and yet one can not define his method of solving the riddle."

The papers read at the meeting in 1888, have not been received.

The following is the list of officers of the Association for 1888: "President, George H. Bartlett; Vice-President, Henry T. Bailey; Secretary and Treasurer, George E. Morris; Executive Committee to fill vacancies by reason of expired terms, Miss Clara Balch and Mr. George E. Woodman."

A letter from Secretary Morris, dated December 24, 1888, encloses the following preliminary announcement of the next annual meeting:

SEVENTH ANNUAL MEETING. Saturday, January 5, 1889.

[Normal Art School Building, corner Newbury and Exeter Streets, Boston.]

PROGRAMME.

Morning:
9.45, Sharp. Opening Exercises and Appointment of Committees.
Report of the Committee on Revision of the Constitution.
10.15. The Proper Place of "Form Study" in Education. By Mr. Geo. E. Woodman, Teacher in Cambridge Evening Schools.
Discussion.
11.15. Design and Historic Ornament. By Mr. H. T. Bailey, Agent of the State Board of Education for the Promotion of Industrial Drawing.
Discussion.
Afternoon:
2.00–2.30. Reports of Committees and Election of Officers.
2.30. Representation. By Mr. A. K. Cross, Teacher in Mass. Normal Art School.
Discussion.
3.15. Parisian Art Galleries. By Miss Adeline V. Pond, Director of Drawing in the Public Schools of Newton.
Discussion.

A "question box" will be placed for the convenience of those who wish to have questions answered or discussed.

All teachers of Industrial Art are cordially invited to become members of this Association.

G. H. BARTLETT,
President.
GEO. E. MORRIS,
Secretary and Treasurer, Waltham, Mass.

As this volume is going through the press, I am indebted to the courtesy of Mr. Morris, the Secretary of the Association, for a copy of the pamphlet containing the four papers read at the meeting in January, 1889.*

These papers are of practical interest and abound in excellent suggestions to those actively engaged in teaching drawing. Several of the papers are illustrated, and the text is so intimately related to these illustrations that they cannot well be separated, so that from these only scant quotation can be made. The first paper, however, not being illustrated is here given entire. The author of this paper sees in the present movement for industrial training a danger lest the artistic development, which it was the purpose of those who introduced Industrial Art Drawing into the schools to foster, shall be lost sight of. It is because this warning seems so urgently needed at this time that this paper is here given in full.

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* "Papers read before the Industrial Art Teachers' Association at their annual meeting Saturday, January 5, 1889. Copies of this pamphlet may be had on application to Geo. E. Morris, Secretary, Waltham, Mass. Price, (by postal note,) 45 cents. Boston, Mass. Printed for the Association. 1889. Pp. 56."

"*THE PROPER PLACE OF "FORM STUDY" IN EDUCATION.*

By George E. Woodman.

One might suppose from my subject that form study had no particular place in education, and that we had come together to discuss its merits, and decide on its appropriate place. The question has been decided, and it became a statute law, that drawing should be taught in our public schools; and by the passage of this act, drawing was placed in our public schools, side by side with reading, writing, and arithmetic. We must not forget that the committee having this matter in charge, were impressed with the importance of their work, and to make their report as complete as possible, recommended that free evening schools be established in the cities and towns throughout the state, that mechanics and artisans might be instructed in mechanical and free hand drawing and design.

If there is any danger of this branch of education being neglected, or the original design of its projectors being perverted, we must come to the rescue, and demand that it be restored to its proper place.

I do not anticipate any danger however, but a careful survey of the premises is necessary. Why? Because one of the principal objects to be attained by the passage of this law, enacted by the legislature in 1870, is likely to be lost sight of.

Great stress is being laid, at the present time, on a preparatory course of industrial or manual training, which is calculated to fit boys for industrial work. School buildings have been fitted up with special care, with modern improvements and special teachers employed to teach the elementary branches of the mechanic arts; in other words, special schools have been instituted for instruction in carpentry, forging, pattern making, foundry work, and printing.

SPECIAL NEED FOR CULTIVATING THE ÆSTHETIC NATURE OF AMERICAN YOUTH.

The possibility is that drawing as now taught in our public schools may be affected, or wholly directed to meet the needs of those who prefer to take the industrial course in the training schools, and that form study in its application to an art industrial training may be neglected. Our rank as a nation is second to none in the development of mechanical industries. Our art industries should receive an equal share of attention from our philanthropic citizens, and I might say, an equal amount of money should be expended from our school fund, for school buildings, with all the necessary appointments; and special teachers should be employed, to teach form study in all its applications to the art industries. It is necessary that art as well as mechanical construction be taught, and with equal advantages to the art student.

I very much doubt whether the good citizens of Massachusetts would be pleased at the present day, to see repeated in print, language similar to the following, which I take from a report of one of our commissioners to the Vienna Exposition:

"A walk through the American department left on the mind an unpleasant impression of meagreness of production, absence of taste and poverty of imagination. The whole result would have reflected no credit on a Worcester County Fair."

It is not possible however, to return to this state or condition of things. But we do claim that in order to reach that eminence among nations, that the truly ambitious American is determined shall be attained, we must cultivate the æsthetic part of the natures of our young men and women, as well as encourage a desire for mechanical construction. We should not be satisfied with a *place* in the line of this grand procession, but push forward with all possible zeal, until we occupy the head of the line. It is possible that the rank I claim for "Form Study" in education may be severely criticised. If I succeed in pointing out its legitimate claim as one of the most important studies taught in our public schools in the development of the mental faculties, I shall have accomplished at least a part of my work.

I do not wish to create an alarm, neither do I wish to be looked upon as a special agent, making claims for a special study that its importance does not warrant. I am inclined to believe, from what I read in the daily papers on education, that the subject is not fully understood, and that educators are not in harmony with each other. Hence more or less confusion exists, and as a branch of education it is left among the maybe's, as is shown by the following resolution passed at a meeting of the B. & S. club of Boston, several weeks ago:

"*Resolved*, The members of the B. & S. club here assembled recognize the excellence of the present school system of the city of Boston.

And particularly those features of the system which offer advantages to those who desire to fit themselves for professional or commercial pursuits, and here express the hope that the system may be further extended by which equal advantages may be offered to those who desire to fit themselves for other industrial occupations."

There is a little encouragement in this resolution; but why draw the line? Are not the great mass of our citizens entitled to, and have they not the right to "equal advantages" for their children, that wealthy or more fortunate parents have for theirs, without the doubtful "may be" offered to those who "desire to fit themselves for other industrial occupations?"

EQUAL CLAIM OF ART STUDIES.

If we have a school system in Boston, recognized for its excellence, which in one of its branches, as in our Latin school, offers advantages to those who wish to become lawyers, doctors and ministers, have we not the right to claim that schools of art should be established, as a part of that public school system, where, under the direction of qualified teachers, students can pursue form study from nature, and the best selected examples of ancient and modern art, in painting, sculpture, architectural design, and surface decoration?

PUBLIC INTEREST IN INDUSTRIES, WHILE IGNORING THE ABSENCE OF THE ART ELEMENT.

I am aware of the fact that it is difficult to overcome the prejudices of those who cannot see clearly the value to our country of an art education, and who look upon such as a special study, and as forming no part in general education. It has been remarked, "It is well enough to have industrial training schools for boys, as we have no apprenticeship system at the present time. We can purchase works of art from foreign countries much cheaper than we can produce them here." How about the interior decorations of our public and private buildings? "Oh, we can import from abroad, workmen of artistic skill for that purpose." Yes, we can, and be as contented with the result as we were at the findings of the committee on awards at the World's fair in England in 1851 when one of our manufacturing establishments received a diploma for artistic furniture, manufactured in Boston from native wood. Who made the design? Who did the work? A Frenchman born and educated in France, and who is now there living at ease on the money earned in this city. It may be that my love of country transcends my judgment, but I do believe in the cultivation of home talent, and home production. If England, France, and Germany, can afford to give to some of its citizens the advantages of an art industrial training, as well as to fit others for mechanical pursuits, why should America remain in the background, when we boast of men with their millions, and a surplus in our national treasury beyond all possible needs? We are not, however, discouraged.

DANGER OF DIVERTING THE STUDY OF DRAWING FROM ART INDUSTRY TO MERE MECHANIC USES.

Progress has been made, and public opinion is being moulded into its proper shape. One by one our prominent manufacturers are coming to realize the importance of the work we have in hand, and in many instances have been charitably disposed in a substantial way, making gifts of money for the building and equipping of schools for industrial training. This however, meets the question only half way; and, as has been hinted in the earlier part of my remarks, form study in industrial drawing, as taught in our public schools, that tends to the development of the tastes for art culture, is likely to be lost sight of, and such forms adopted as are best adapted to illustrate mechanical construction. In such a case we would be forced to stand by as unwilling witnesses to the absorption of what we consider a most important feature in education.

It is the advancement of so important a branch of education as form study that should not be lost sight of.

WE NEED ARTISTS NO LESS THAN ARTISANS.

The future prosperity of our country demands the fostering of every branch of education that tends to develop the powers and faculties of its people. Our growth as a nation has been one of progress from the beginning, and selfishness should form no part of our national character. In the distribution of our school fund, an adequate amount of money should be appropriated for the successful maintenance of a suitable place for form study, which should be a part of our public school system, as much so, at least, as manual training. We need sculptors, painters, carvers, decorators and designers, as well as carpenters, blacksmiths, machinists and printers. In fact, there is an increasing demand for objects which are beautiful as well as useful. In our homes, artistic furniture, decoration of the ceiling in color, and beautiful forms in relief on the walls are much to be desired. The association of beautiful things is always pleasing to the cultivated mind.

"Ideas of beauty," says Ruskin, "are among the noblest which can be presented to the human mind, invariably exalting and purifying it according to their degree." To produce objects of beauty and excellence, the study of correct forms in nature and art are necessary as a foundation.

There is a constantly increasing demand for those that are skilled in art, as painters, sculptors and interior decorators, that cannot be filled by American artists; and nearly all the heads of art industrial departments in our state, and through the United States are foreign artists. The time has arrived when we should think seriously on this subject.

Are you willing to say that the American boy or girl is mentally incapable of becoming as well qualified to fill these positions? that the average intelligence of our boys and girls is below that of the boys and girls in England, France and Germany? If so, I am not. From the history of the past quarter of a century, I am warranted in saying that the average American boy or girl, with equal educational advantages, is superior to the foreign boy or girl. It has been said that "no improvement can take place in the art of the present generation until all classes, artists, manufacturers, and the public, are better educated in art, and the existence of general principles more fully recognized."

How can this be accomplished? It can be by the introduction of free schools of art. "Form study" can claim an economical value in general education, and in practical life. It is a strong power in the development of moral and intellectual character. It benefits the body by training the eye to see and the hand to do; it develops the faculty of reason, and the ability to distinguish between right and wrong; it strengthens the powers of concentration and imagination, and as a cleansing agent, purifies the thoughts, giving an inspiration of Deity.

Can there be a grander or more noble study than this, that has for its basis those virtues which are the distinguishing characteristics of a civilized and christianized people, which make us better men and women, by refining and strengthening our moral and intellectual faculties, restraining the passions and purifying the affections, and which make us obedient to the laws of nature, truthful in our expressions, and faithful to our trusts?"

The second paper is very practical and full of interesting suggestions. This paper is fully illustrated, text and illustrations being so interwoven that they cannot well be separated. Yet the subject is so important and so admirably presented as to compel the insertion here of such passages as can be quoted apart from the illustrations.

Attention is called to Mr. Bailey's incisive words about "elementary design." When people talk gravely about the "original designs" made by babies in the kindergarten, and by the youngest primary school children, one wonders what meaning they attach to the word "design."

It will be well for such persons, teachers of drawing or others, to ponder for a season on the significant words of Ruskin as quoted by Mr. Bailey. Cant, mindless routine, and the parrot-like reiteration of pet phrases, are as valueless in connection with this study as they are in all the other relations of life. How can babies of four, or even eight years of age, have stored the "observation and experience" which Ruskin declares the essential pre-requisites of design?

On the other hand, Mr. Bailey points out how the older children can be so informed as to what is good design, and taught in each case to distinguish the single predominating motive which underlies the historic ornament of the different races and eras, so that they may proceed with intelligent enthusiasm to compose designs for themselves in accordance with the principles by which all good designs have been, and must ever continue to be, developed. By like methods the younger children may be trained so far as their briefer "experience," and more limited "observation" permit. Whether much of "stick layings" and "paper cuttings" which prevail are not worse than useless, as leading to any desirable development of the æsthetic faculties, may well be questioned.

HISTORIC ORNAMENT AND DESIGN IN THE PUBLIC SCHOOLS.

BY HENRY T. BAILEY, *Agent State Board of Education.*

Mr. President and Fellow Teachers:—

The subject of Industrial Drawing is so comprehensive in its limits and a teacher's time is so thoroughly occupied, that we are at times discouraged.

What to teach to secure certain ends, and *how* to teach to secure those ends with the least possible waste of time and force, are important questions.

We are, I think, almost unanimously of the opinion that one of the ends to be secured in the teaching of Industrial Drawing is the development of the pupils "Æsthetic Nature;" but just how this is to be done is yet but partially determined.

Some people tell us, for example, that the pupil must not only be able to represent the *facts* of a cylindrical form, be able to represent the *appearance* of the form, and to develop its surface; but, that in addition to this, he must be able to discover in that rough block of wood, the element which shall place it in that scale of beauty which ascends from the cube to the *Venus de Milo*.

While admitting the value of the study of the æsthetic in the sphere, cube and cylinder as preparatory to the systematic study of Constructive Design, we should also remember that Decorative Design is of no less importance, and that in the school as it now exists, we must depend largely upon *it* as a means of educating the pupil's taste and developing originality.

To secure success in teaching any subject, we must be persuaded of its importance, we must have a definite "plan of attack," and we must keep the desired end in view from the beginning.

I believe we all feel the importance of the subject under consideration. We all feel the importance of the æsthetic element in Industrial Drawing.

Col. Clarke, speaking of this in his valuable History of Education in the Industrial and Fine Arts in the United States, says, "Compelling the eye to close and accurate observation, it teaches it to see, and behold a new world opens before the hitherto heedless child, who is thus endowed with the perception of natural beauty: a gift that will enrich and gladden all his after life. For him there is everywhere, now first aparent, the exceeding and marvellous wealth of varied beauty which abides in the forms of external nature. The curving branches of the wide spreading elm or the drooping willow, the delicate leaves of the upspringing flower, the softened lines of the sloping hillside, and the grand masses of the majestic mountains as they lift themselves sublimely towards the heavens, all these have for him a meaning and a joy never before suspected. He has become apprehensive of the significance of form, and at once his eyes are opened on a new heaven and a new earth."

After reading such words as these, we say the æsthetic *is* important and we must teach what we can of it; but when we hear Ruskin add, "Life without industry is guilt, and industry without *art* is brutality," we feel almost like saying, "Woe is me if I teach not design."

"Being thus fully persuaded in our own minds of the value of Historic Ornament and Design, let us consider some *Plan*.

Historic Ornament should be studied in connection with Design. An old Japanese proverb says, " To know the new, search the old." The plan simply stated then is this:

HOW TO STUDY HISTORIC ORNAMENT.

Study Nature for Materials and Principles. Study Historic Ornament for their applications.

There has been a great outcry of late against copying, yet we still copy drawings of Historic Ornament. Would it not prove to be more educational and of greater value to the pupil if instead of thoughtlessly copying these examples, he should be lead to study them,—to analyze and compare them?

In all styles of ornament we find as main lines, the horizontal, vertical, and oblique lines, radiating curves, balanced curves. the circle and the spiral. All other forms whatsoever are combinations of these seven. The units of design are infinite in number, but there are only four classes. The geometrical, the modified geometrical, the vegetable and the animal.

Now would it not be both interesting and profitable to compare the manner in which one nation combined these elements with the manner in which another combined them?—to see if the Egyptian perceived in a certain form what the Greek saw in it,—to compare the Greek ideal of beauty with the Roman,—to ascertain the favorite and most characteristic units of the different nations and to compare them?

For example,—when your class is studying *units*, why not call their attention to the importance of certain historic units? Lead them to see that the presence of a certain unit decides the character of an ornament.

The presence of the Lotus stamps a design as Egyptian. The Honeysuckle ornament, so called, indicates Greek. The Acanthus leaf, Roman. The Lily, Byzantine. There is no mistaking a Saracenic unit or a Gothic unit. Let the class draw one unit of each style, and compare them—study their masses and lines, know their history.

When your class are studying main lines, why not call their attention to how a single main line has been used in the past? Take for example the spiral.

The Egyptian saw in the spiral only a suggestion of his beloved Nile. The Greek saw the perfect beauty of the volutes of the antefix and the Ionic capital. The Roman saw in it the main lines for his luxuriant scroll work. The Byzantine and the Saracen saw enough to admire in one or two spires and embodied these parts in their exquisitely finished units. The artist of the Renaissance loved the spiral in whole and in part. He used it in cornice and pilaster, in window and carpet and hanging. What do *we* think of the spiral, and how do we use it in our day?

Besides these points of comparison indicated there are others. What use has been made of the circle by different nations? How have their ideas of refinement varied? How have they conventionalized? How do they differ in their management of stalks and growing points? Have they used animal forms? A dozen other lines for comparative study will suggest themselves to you if you endeavor to make Historic Ornament an educational factor in connection with your Design.

In the High School why not study Historic Ornament in connection with Architectural Drawing and Color?

How does climate effect the styles of architecture? What lines of construction were used by various nations? Did other nations have such variety in style as we now have! It requires but a few lines to suggest Egyptian Architecture or Greek or Roman. A pure dome is Byzantine. A swollen or pointed dome is Saracenic. And spires and steep roofs or battlements and pointed arches and vertical lines are Gothic.

The question is often asked, "How shall we teach harmony of color in the High Schools? The pupils tire of coloring diagrams, and when they are given liberty to color a design of their own they make *such* work of it;—" they have no taste for color."

Dr. Johnson once said, " Persons can no more improve their taste by reading essays on taste than they can improve their appetite and digestion by studying a cooking book." While admitting the truth of the doctor's statement, I do not hesitate to affirm that taste for color may be refined, if not by reading, then by observing and imitating. Where shall we find better material to place before the pupils for their study than in Historic Ornament? Encourage them to study examples of historic coloring. What was the Egyptian idea of harmony? How did it compare with the Greek? The Byzantine? The Saracenic? The Chinese? The Indians? Do any agree with the sacred harmony of the Hebrews,—blue and purple and scarlet with white and gold?

I offer these suggestions with the hope that they will lead to thought; and I am sure thought will lead to action.

WHAT IS "DESIGN"?

That we may more clearly see just what we have to do in Design, let us consider it by itself; keeping always in mind, however, that if for convenience we now separate it from Historic Ornament, the two are "one and inseparable" and should be so considered in our teaching.

The root of all past evil in elementary design has been the idea that designs are the results of experiments in the arrangement of lines, or, to be more scientific, "fortuitous combinations" of *lines*. Fig. 13. plate II, a fac-simile reproduction of a "design" marked 100 per cent. by a certain supervisor of drawing of long experience in one of the large cities of this State, illustrates this kind of work. Such things are of no value. They are an *end* in themselves rather than a means for the training of taste and for imparting correct ideas of the principles governing good design.

"Design," says Ruskin, "is not the offspring of idle fancy; it is the studied result of accumulative observation and delightful habit." And again, "Without observation and experience, no design; without peace and pleasurableness in occupation, no design."

Notice, he says, it is the result of observation and experience. (Here is where Historic Ornament comes in with something worth observing.) He also says, "Without peace and pleasurableness in occupation, no design." Now I think you will admit that as a rule a pupil making an original design under the direction of the ordinary teacher feels little "peace and pleasureableness" in his occupation." * * *

Now if his teacher had first shown him an example of good design and had then led him to obtain a few units, had shown him how to arrange them, had then proved to him that *he* could make a good design if he would try, he would not only have gone to work with a will when asked to make an original design but he would have commenced his work intelligently and enthusiastically with "peace and pleasurableness" as Ruskin says.

Some of us have found by experience that pupils can be led to enjoy their design when they use forms instead of lines; and the result has been a flood of paper cuttings and tablet and stick layings. Pupils and teachers are interested, *but*—what more do they know about the principles of Design, and how much is their taste refined?

What we need is a logical course in design.

Obviously the simplest kind of design is the mere repetition of cuts or marks, as found among savage tribes of all countries. Beginning with this, then, and following the development in logical order we have as units:

I. Lines and angles.
II. Geometric forms.
III. Modified geometric forms.
IV. Units suggested by plant forms.
V. Plant forms conventionalized.
VI. Natural forms, as shells, horns, skulls, birds, etc.
VII. The human figure.

Considering this classification as a basis, a logical course fitted for public school work would be:

FOR PRIMARY AND GRAMMAR SCHOOLS.

First Year.

Units: Sticks and splints.
Arrangements: Repetition.

Second Year.

Units: Straight line geometric forms.
Arrangements: Repetition and alternation.

Third Year.

Units: Straight and curved line geometric forms.
Arrangements: Repetition, alternation and symmetry

Fourth Year.

Units: Modified geometric forms.
Principles: Order and contrast.

Fifth Year.

Units: Modified forms, combined.
Principles: Strength, unity and variety.

Sixth Year.

Units: Conventionalized leaves.
Principles: Growth, distribution.

Seventh Year.

Units: Conventionalized plant form.
Principles: The foregoing principles applied in bi-symmetric design.

Eighth Year.

Units: Conventionalized plant form.
Principles: The principles applied in balanced design.

Ninth Year.

Units: Geometric, natural and conventional.
Principles: Those governing simple applied design—as painted tile, embroidery patterns, borders, prints, etc.

HIGH SCHOOL COURSE.

A supplementary course for the High School would be as follows:

For the first year botanical analysis; review of elementary design and applied design in which comparatively little knowledge of construction is necessary; as in embroidery, china decorations, simple wood carvings, fret sawing, and other hand work.

For the second year botanical analysis; methods of construction preparatory to applied designs for iron work, cast and wrought; printed dress goods, book-covers, borders, etc.

For the third year study of plant and animal form; methods of construction preparatory to applied designs for relief-work for plastic material, wood, metal, etc.; wall paper, cretonnes, etc.

The aim in all this work in Design should be to refine and educate the pupil's taste and to teach correct principles and their applications; not simply to obtain "Original Designs."

With such a logical course as this, good educational work in Design can be done in every grade from the lowest Primary to the highest High; and what is of equal importance, every pupil can do the required work and so be benefitted."

A series of illustrations show the designs made by pupils after such instruction.

SIXTH YEAR SCHOOL WORK.

"Fig. 3 illustrates the work of the pupils during their sixth year of school life. Instead of geometric forms, natural forms are used as the basis for ornamental work. The order to be followed in producing designs of this kind is:

I. Thoroughly understand what is required; the shape of the space to be ornamented, the character of the units to be used, etc.; and select materials.
II. Make a careful drawing of the natural leaf selected.
III. Conventionalize it.
IV. Cut from paper a number of the conventional forms.
V. Arrange the forms, and decide upon the shape and size of a central form.
VI. Draw in order, inclosing form, radiating lines, units, centre.
VII. Line-in, and finish by half tinting the ground, or the units, or by coloring.

The design may be constructed of colored paper, or traced upon cloth and embroidered, or applied in any suitable way to the object it was intended to decorate.

* * *

In every grade, to insure good results, the teacher must plan each lesson carefully. He must know every step of the way, and be sure that the stairway to the desired "landing" is perfect,—all the "risers" equal and no "treads" missing.

A similar order should be pursued in what is usually called Applied Design.

TWO KINDS OF APPLIED DESIGN.

Judging by the work usually classed under this head, there are two varieties of applied design; the Theoretical and the Practical. The latter variety only is worthy of a place in the public school course and consequently we must change the character of much of our work in this line, or else change its name, for three-fourths of the design now labelled "Applied" could be applied with success to nothing but the waste basket. One thing is certain. There must be less studying *about* constructed objects, more studying of the objects themselves. So long as teachers rely upon the various systems of drawing books and manuals for their information concerning practical applied design, there is no hope. These books, with few exceptions are utterly unreliable. The drawings of metal work,—crestings, brackets, fences, registers, hinges, silver work and jewelry; and of wood work,—brackets, cabinets, carved and sawed panels, etc., are incorrect or unintelligible and the designs execrable.

We must study examples of good applied design; we must know every possibility of our material and every limitation imposed by the process of manufacture.

For example, before a practical applied design for cast metal can be produced by a pupil he must know something of pattern making, mould making, casting and the strength of the material.

Each metal has its appropriate treatment, each wood its suitable position.

LOGICAL COURSE IN APPLIED DESIGN.

The seven steps in applied design are as follows:

I. Consider well what is required and in what medium it may be best rendered.
II. Consider the available material; its strength, texture, etc.
III. Know the entire process of manufacture.
IV. Plan the design,—considering size, shape, main lines, units, etc.
V. Sketch the main lines.
VI. Sketch the clothing of the lines.
VII. Finish the design.

But how many such designs ought a pupil to produce in a year if he has to know all these things?" somebody asks.

I answer: The knowledge gained by the pupil, and the training he receives in producing *one* practical applied design, after this fashion, will be worth more to him and to his teacher than ten or ten times ten of the *Theoretical* variety.

The practical element must go hand in hand with the æsthetic.

Drawing isn't the "fancy study" thousands of people right here in Massachusetts still suppose it to be. It is the one universal language. A knowledge of one portion of it raises a mechanic's pay from two dollars a day to five; a knowledge of another portion enables an artist to take a canvas worth two dollars and enhance its value to two hundred; while a knowledge of yet another portion insures a handsome income to the designer. And yet these are not the only results, *nor are they even the principal results.* There are others whose value cannot be reckoned in dollars and cents.

Let us endeavor to so teach this subject to our pupils that they will go forth to their life work having eyes that can see; minds that can think; hands that can do. Let us do our part towards so educating them that they shall find health and wealth and happiness in honest toil, and see in the ordinary surroundings of life, in the crystals of the rocks, in the humble grass and modest flowers; in air and sea and stars, the ineffable and inexhaustible beauties of God's Historic Ornament and Design.

The paper which follows, by Mr. Cross, treats of the practical application of the laws of perspective.

REPRESENTATION.

By Anson K. Cross.

This term includes all drawings, constructive and decorative works being as fully representations as perspective views, the geometric views conveying ideas of facts and actual dimensions, the pictorial of facts and apparent dimensions. We will consider simply the representation of appearances and our subject is really 'Pictorial Drawing.'

The aim of such drawing undoubtedly should be to awaken in the mind of the beholder the same impressions as to form, size and position as the objects themselves would create when viewed from the artist's position. Drawings to be appreciated require certain education or qualities, but pictures and illustrative drawings are so numerous that this education is unconsciously acquired, and, by the average intellect, photographs and pictures are readily understood.

Photographs and drawings such as isometric are often very different from the image which would be produced upon the eye by the objects, and yet they are accepted without difficulty, the mind having a conception of the form and giving to the drawing the most reasonable interpretation ; so that a quite conventional or incorrect drawing, so far as appearances are concerned, may be almost as readily read and accepted as one more nearly agreeing with the appearance. This does not affect our decision as to the aim of the artist ; it does however, assist him in his work which otherwise would sometimes be nearly, if not quite impossible.

A drawing which produces upon the eye the same image as the object must be one whose proportions agree with the appearance, the angles between the visual rays to the drawing being relatively the same as between the rays to the object. If the horizontal or vertical angles should be greater to the drawing than to the object, the drawing would be correspondingly too wide or too high.

The rest of this paper, which fills twelve pages with five additional pages of illustrations, is technical and dependent in the examples given. It is a valuable practical paper for teachers.

The very readable, interesting paper, which closes the series, with its fitting, sketchy illustrations, gives a graphic picture of the wealth of art stored up by the successive Governments of France, for the enjoyment and art culture of all the people. It is little wonder that, after centuries of such unconscious training, the French artists and artisans lead the world.

IN PARIS GALLERIES.

By Miss A. V. Pond.

"* * * . One of the merits that the casual unobserver least expects to find in French character is thoroughness. Yet in all things of art and art-education, French thoroughness,—shall I say it?—puts to the blush our sometimes superficial New World culture. A keen artistic conscience keeps these people alive to the truth that what is worth doing in art, is worth doing well; the pity of it is, this same gift does not help them to determine whether after all, the thing be really worth doing. But it is not for me to here discuss the moral of it. Earnestness of research can no farther go than in the work of the modern French school. Masters like Gérôme and Meissonnier, in painting, and Dubois and Frémiet, in sculpture, unconsciously teach a great moral lesson to the younger men who look to them for counsel,—the lesson of 'the nobility of labor.' The master is a hero to his student, and the lesson is not lost. One student can speak no greater scorn of another's work than to say of it, 'It is not serious.'

WHAT FRANCE DOES FOR THE ART EDUCATION OF THE PEOPLE.

In the systematic hospitalities of the State toward art, there is the same seriousness of purpose. France gives her children a free education in elementary art, and combines example with precept by setting up good art in the market-place. She searches each Salon for excellent work, whether of struggling genius or of maturer merit. She opens the doors of her Ecole des Beaux Arts to over a thousand pupils in painting, sculpture, architecture, engraving, and gem-cutting, and at her own expense provides four years' study in Rome to those pupils who have attained the highest honors in their respective departments. But it is in her museums that she makes her most profitable investments ; for here, as long as Paris continues an art centre, all the world may share the dividends.

THE MUSEUMS OF PARIS.

The name of Paris museums is legion. There is the Louvre, with its treasures of ancient, yet living art, and the Luxembourg, with its bright page of modern masterpieces, whereof some must surely die. Under the shadow of the Sorbonne is the quaint old Cluny, with its message for the artisan; in face of the Tower Eiffel is the fair new Trocadéro, with many a lesson for the architect; and in the heart of the city stands the Ecole des Beaux Arts, with casts and copies that speak alike to painter, sculptor, and architect. Then there is the Carnavalet, a Revolutionary museum lately described by Theodore Child in an interesting magazine article. There is a museum of Artillery at the Invalides, a museum of Medals at the Bibliothèque; a museum of Decorative Arts in the Palaise l'Industrie, a museum of Natural History at the Jardin des Plantes. In this host of museums, the three of chief charm in an artist's eyes are the Louvre, the Luxembourg, the Cluny, etc. * * *

Of the whole magnificent outer fabric studded with gems of sculpture of different periods, perhaps the most beautiful parts are those of earliest and those of latest date. Nineteenth century runs Renaissance hard. If you do not like Carpeaux's Flora Pavilion, you must content yourself with Jean Gougon's Façade. It is impossible with one blow of the eye to form any idea of the extent of the pile. Figure to yourselves, you who have top-views at your tongue's ends, figure to yourselves the birds-eye view of a Colossus, stretching out his huge arms westward along the Seine. That Colossus is the Louvre. Forty-eight acres are in his compass. Within his mighty ribs, the most ancient part of his anatomy, are antiquities of all nations, sculptures of all ages, drawings of many masters, piled story on story; here also is the La Caze collection of French and Dutch paintings, kept, by a clause in the donor's will, separate from the other pictures in the Louvre. Along our giant's left arm lies the famous grand gallery, a Sabbath day's journey in length, and over-flowing with all the light, life, mystery, parable, parade, prayer and anecdote brought thither by the Italian, Spanish, German, Flemish and Dutch masters. In the left biceps are the French masters, from Poussin to Rousseau, from Claude to Corot. In the shoulder is the gallery of Apollo, hung with tapestry portraits of celebrities, and rich in all manner of spoil; and here, too, is the wonderful Salon Carré, containing the most precious jewels of the collection. The rest of the huge anatomy is given over to government purposes.

In former days, our Colossus held in his grasp a magnificent toy, the palace of Tuileries, built, as its name tells, over a tile-kiln. The royal puppets that moved therein must have skipped rather nervously on divers occasions, when in the course of human events Destiny pulled an unexpected wire. In fact, the lower orders never loved this palace; and when at last in '71, they expressed themselves with petroleum and a match, the Tuileries, which had risen out of clay, fell back into ashes; and thus fades the glory of the world. At this time the giant was badly singed as to his members; and, what is worse, grave internal injuries were feared. But fortunately the ups and downs of French history has taught the government several useful tricks in the way of filling up windows with sand, and of storing works of art in blind cellars; and the Louvre escaped with a loss of 90,000 volumes from the Imperial Library. * * * Parisian youth begins its gallery going early; children under five and even babies in arms are brought into the museums, quite as much, I do hold, for their own infant edification as for the furtherance of their nurses' flirtations with the ever-present military. I don't know whether there are good text books on drawing in public schools. I only know that in Paris, a child cannot walk two blocks without getting a drawing lesson, and when he plays his hardest in the Luxembourg or the Champs Elysées, those paradises of statuary and babies, he is more at school than ever.

And in Paris not only the children, but the poor and lowly go into the galleries. For me,—I rejoice to hear the wooden shoe on the marble floor; I am glad that the pride of princes has been turned to the profit of the people. * * *

THE CLUNY MUSEUM.

In Paris, as in other places, extremes meet. Near the newest museum stands the oldest monument. A walk of less than fifteen minutes bridges for us more than fifteen centuries, and carries us from the Luxembourg, finished yesterday to the Cluny, built over the ruins of a Roman palace, one hall of which still stands. The Cluny takes its name from its founders, the abbots of the order of Cluny. It is late Gothic, early Renaissance, and perhaps a little Gallo-Roman also. Owned by ecclesiastics, it was often loaned to kings; here the widow of Louis XII mourned, here the daughter of Francis I. was married. For centuries the good abbots kept their property, but at last the Revolution transferred it to the State, and the State disposed of it to private individuals.

In 1831, it came into the hands of Du Sommerard, the learned antiquarian, and was used as his private museum. It was Du Sommerard's dream to keep his collection in his own country; and his heirs after him, with a magnanimity little common, refused the more brilliant offers of English connoisseurs, and sold to

France the Cluny and the Cluny collections. Very quaint and charming is the present personality of the old pile; neither the touch of time nor the hand of the restorer has robbed it of the mellow lights of its Gothic string courses, or the pleasing unexpected darks of its carved archways. The garden of Roman conquerors and French queens is now studded with fragmentary sculpture; and hither of a Sunday come the pale faced children of the quarter, to inspect these monuments, and to play exciting games of *cache-cache* about them. As for the museum, was ever collection so varied as this? As the traveller roves from room to room, noting here an array of shoes of all nations, and there a row of wax medallions, glancing now at the royal bed of King Francis, now at the Golden Rose of Bâle, he smiles in irresistible remembrance of the different topics of conversation proposed by the classic walrus:

> —"The time is come," the walrus said, "to talk of many things,"
> Of shoes, and ships, and sealing-wax, of cabbages, and kings,"

And the objects are as valuable as they are varied. Over and above its money value, each of the 10,000 articles has to some thoughtful student the untold value of its fitness to his purpose. If he wishes to paint Palissy in his workshop, or Louis XIV. descending from his carriage of state, he may find in the Cluny the veritable vessels, the veritable equipage. Half the secret of French thoroughness lies in French opportunity.

VALUE OF THE CLUNY MUSEUM TO FRENCH ARTISANS.

To the artisan even more than to the artist the Cluny is an opportunity. All handicrafts are here represented, particularly the handicrafts of those Middle Ages that saw

> —"the flowers of poesy bloom
> In the forge's dust and cinders, in the tissues of the loom."

Here are Venetian embroideries and tapestries of Arras; wood carvings from chateaux and sculptured ivory from cathedrals; instruments of music and of precision, utensils for the toilet and the table, and a multitude of objects in chased copper and hammered silver, wrought iron and beaten gold.

The Cluny thus forms a fitting complement to the Louvre and the Luxembourg. In aim it differs widely from both; hence in results no contrasts and no comparisons are to be suggested. Not that these museums tell all that may be told of French or even of Parisian museums. Circulation as well as centralization lies in the policy of France's Ministry of Public Instruction and Fine Arts. The great expenditures are justified by the great results. France has learned for herself that there is a daily usefulness in beauty as well as a daily beauty in usefulness, and that there remains for the alabaster box a higher destiny than the one suggested by the short sighted disciples: "*It might have been sold for more than three hundred pence.*"

The list of the papers read before the annual meetings, as shown in the programmes here reprinted, as well as the extracts here given from several of these interesting and suggestive papers, sufficiently establish the claim of this association to be the legitimate successor and heritor of that earlier society whose members, under the wise guidance of their president, the late lamented Charles C. Perkins, prepared and published the notable volume of "Antifex Papers;" already described in Chapter IV, of Part I, of this Report. The character and variety of the several papers prepared by the members of these two associations of the Industrial Art Drawing Teachers of Massachusetts, furnish convincing proof of the liberalizing nature of the new study. They are, in themselves, a strong plea for the encouragement, development and dissemination, of this kind of "Manual Training;" which, unfortuately, in the later movement for mere industrial drawing and mechanical work, seems in danger of neglect.

VI.

INDUSTRIAL ART EDUCATION BEFORE THE NATIONAL EDUCATIONAL ASSOCIATION 1887 AND 1888.

PROCEEDINGS OF THE ART DEPARTMENT OF THE NATIONAL EDUCATIONAL ASSOCIATION DURING THE ANNUAL MEETINGS HELD IN CHICAGO, JULY 1887, AND IN SAN FRANCISCO, JULY 1888—PAPERS ON DRAWING, AND CONCISE REPORTS OF INDUSTRIAL ART EXHIBITIONS.

INTRODUCTION.

The following extracts, showing the general proceedings of the Art Department at the two annual meetings of the National Educational Association, are taken from the admirable volumes containing the reports in full of these most interesting yearly meetings of American educators, which have already been so freely drawn upon in Appendix "L" of this volume, for the accounts of the Industrial Education movement, and of the efforts to promote the introduction of Public Manual Training Schools, as a part of the Public School system of the several States of this Union.

These brief extracts will serve to show the direction of the efforts of those educators who are seeking to promote the development of the art faculties of the American school children; and who, it is to be hoped, may, by their continued efforts, effect something in restraining the present tendency to eliminate, not only the word, but the idea of "art," from the province of Industrial Education.

As the contents of the body of this volume, and as especially the papers, and discussions, contained in the several appendices, show only too clearly; there is, at the present time, a powerful set of the tide among educators, and consequently among the people, drawing all educative forces away from the ideals of true art; and towards the barren shores of inartistic industry.

The triumphs of the American Edison, and the admitted fecundity and superiority of American inventors in the line of machinery and of contrivances, and engines for the application of the forces of nature to the service of industrious man, in connection with the pitiable inferiority of the products of artistic industry taken as a whole, which have been displayed by Americans in competition with the world's showing of art products, would seem to suggest that it is not in the direction of mechanical invention, or of applied science to industries, that the American youth stand most in need of special instruction!

The sporadic instances in which American silversmiths and an occasional manufacture of artistic articles have won deserved distinction in world competitive exhibitions are as gratifying as they are unusual. The notable success of some of the young American art students in Europe is full of encouragement. These individual instances are enough to give good grounds of belief that if suitable elementary art instruction prevailed throughout the public schools, the general average of art knowledge and art production would surely in time be raised.

There has been some apprehension lest the drawing teachers themselves, should be turned aside from their high ideals of art and artistic harmonies, to giving undue importance to mere mechanical and "constructive" drawing.

The extracts from the papers and reports which follow will serve to indicate their present tendencies.

The papers commence naturally with the authorized report of the action of the Art Department at the Chicago meeting.

PROCEEDINGS OF THE ART DEPARTMENT.

MADISON STREET THEATER, CHICAGO, *July* 13, 1887.

The meeting was called to order at 3 o'clock p. m., by the president of the department, Mr. Walter S. Perry of Massachusetts, who delivered the annual address.

The Secretary, Mrs. L. F. Pickins, being absent, on motion of L. L. Thompson, of Indiana, Mr. Frank Aborn, of Ohio, was chosen secretary *pro tem.*

In the absence of Mrs. Elizabeth F. Dimock, of Illinois, a paper prepared by her on "Drawing in Grammar and Primary Schools," was read by the assistant superintendent, Mrs. Ella F. Young, of Chicago, Ill.

An interesting exercise was next given in clay modelling by Miss Jennie MacWhorter, of Chicago.

Miss Sullivan being absent, an illustrative blackboard exercise was given to a class of ten children by Miss Holmes, of Chicago.

Miss A. E. Hill, of Minnesota, and Mr. Walter S. Goodnough, of Ohio, then read papers on "Drawing in Ungraded or Village Schools."

President Perry appointed the following committee on nominations:—Wm. M. Mason, of Pennsylvania, Henry T. Bagley, of Massachusetts, Harriet Magee, of Wisconsin.

Adjourned.

FRANK ABORN.
Secretary pro tem.

The second meeting of the Art Department was called to order at 3 o'clock p. m., by the president.

In the absence of the secretary, Mr. E. C. Colby, of Rochester, N. Y., was chosen secretary *pro tem.*

The committee on nominations presented the following report:—

President—Geo. H. Bartlett, Principal of the Massachusetts Normal Art School, Boston, Mass.

Vice-President—Miss Josephine C. Locke, of St. Louis public schools.

Secretary—Prof. Eben, Rose, Mechanics' Institute, Rochester, N. Y.

On motion, the secretary was empowered to cast one ballot for the officers, and they were declared elected.

Mr. Caleb N. Harrison, of Milwaukee, Wis., read a paper on "Drawing in High Schools."

The President of the Department read a paper on the same subject.

These papers were then discussed by Wm A. Mason, of Pennsylvania, and W. S. Goodnough, of Ohio.

A paper was read by Mrs M. Louis Field, of the Framingham Normal School, Massachusetts, with sheets showing work in several grades.

A paper upon the same subject was presented by Miss Harriet C. Magee, of Oshkosh, Wis.

RESOLUTIONS ON THE DEATH OF WALTER SMITH.

Mr. Geo. H. Bartlett, of Boston, Mass., offered the following resolutions and moved their adoption:—

Whereas, It has pleased Almighty God to remove by death Prof. Walter Smith, to whom is due the honor of being the pioneer in American art education, and of giving a lasting impetus in the direction of a rational system of industrial art; and, *Whereas*, The present is the first meeting of the National Educational Association since his decease, be it

Resolved, That the Department of Art Education now assembled, hereby express its appreciative recognition of the great value of his work in this country, and of its moulding influence in the American public schools.

Resolved, That this Department tender its sincere and heartfelt sympathy to his family in their great loss, and

Resolved, That the secretary of this department be instructed to forward a copy of these resolutions to the wife and family of the deceased.

The motion was seconded by Dr. A. A. Miner. of Boston, Prof. L. S. Thompson, of Iowa, and Chas. H. Ames, of Boston.

The resolutions were unanimously adopted.

Miss Josephine C. Locke presented a report on "Drawing in Normal Schools."

RESOLUTION APPROVING "THE REPORT ON ART EDUCATION."

Mr. Walter S. Goodnough, of Columbus, Ohio, called the attention of the Art Department to the recent publication of the Report on Art Education, and to the volumes to follow, and offered the following resolution:

Resolved, 1st, That it is the opinion of the Art Department of the National Educational Association, in session at Chicago, that the Report on "Art and Industry: American Education in Fine and Industrial Art," prepared by Col I. Edwards Clarke, issued by the Bureau of Education, is a document of the greatest value to all interested in this subject, and is one of the most important public documents, being an encyclopedia of information on all that had been accomplished up to the date of its issue, and containing valuable papers on the economic, æsthetic, and educational value of the subject.

2d. That it is the unanimous voice of this Department that Volume I, now out, which has already received world-wide attention, should receive the widest possible circulation, and should be in the hands of every public educator in the land.

3d. That the volumes to follow should be given to the public at the earliest possible date.

The resolution was seconded by Mr. W. F. Mason, of Philadelphia, and others, and unanimously adopted.

RESOLUTION REQUESTING SUPERINTENDENT MAC ALISTER TO PREPARE A PAPER ON DRAWING.

The following was also offered by Mr. Goodnough:—

Although drawing is growing in favor, it is not yet held in such esteem as we could desire. Mr. James McAlister, of Philadelphia, is well known for his early interest in this study and his intelligent advocacy of it. Therefore, be it

Resolved, That Mr. James McAlister, of Philadelphia, be requested to prepare for general publication a paper on the Study of Drawing in Public Schools, and that a committee be appointed to confer with him and attend to the publication of the paper.

The resolution was adopted, and Miss Josephine C. Locke, of St. Louis, appointed such committee.

The Department then adjourned.

E. C. COLBY,
Secretary pro tem.

PAPERS READ BEFORE THE ART DEPARTMENT AT CHICAGO.

The papers which are announced in this brief summary of proceedings follow; they fill some fifty pages of the volume, and are well worthy of publication. Want of space prevents the giving of extracts from all of them here at length, which would otherwise be most desirable. A very suggestive and practical paper on Drawing in ungraded schools, etc., by Professor W. S. Goodnough, of Columbus, Ohio, will be found of value to persons interested in securing the benefits of a training in drawing to country children. How important it is that they should be reached may be seen from Mr. Goodnough's opening statement that "more than two-thirds of the school children of the United States are in ungraded schools." He urges the desirableness of "form study and drawing," from the educational, the æsthetic, and the industrial standpoint.

He recites the peculiar difficulties which retard the introduction of the study in the country schools arising from general lack of information concerning the new study on the part of the people, and especially on the part of the teachers; the absence of proper publications for use in ungraded schools, and especially the wide range in age and in acquirement of the twenty to sixty pupils grouped under a single teacher, the age varying from six to twenty years, and the acquirements from ignorance of the alphabet to a knowledge of Algebra! He concludes that County Institutes afford the principal means of reaching these two hundred thousand teachers of country schools, and closes his valuable paper with the following programme of an Institute Course:

INSTITUTE COURSE ARRANGED BY PROFESSOR W. S. GOODNOUGH.

In an institute of five days, two lessons a day of one hour each, I would divide my time as follows:

1. Preliminary remarks on the character and value of the study; elementary ideas of forms developed by handling objects and forming them of clay; use, preparation, and care of clay.
2. Handling of pencil. Practice in various positions for drawing different kinds of lines, straight and curved; sketching, brightening, erasing.
3. Methods of giving lessons from objects, blackboard, copy, dictation, designing; arranging sticks and tablets; cutting, analysis of form.
4. Construction: top, front, and end views; sections, dimensions; geometrical solids used. Freehand.
5. Construction: working drawings to scale; geometrical or common objects used. Rule and compass.
6. Representation: measuring in space. Drawing objects of two dimensions. Elementary principles. The circle, cylinder, cone.
7. Representation: principles governing straight-lined objects. Cube, rectangular prism, triangular prism, pyramid.
8. Decoration: elementary ideas and principles. Simple variations. Abstract lines and forms used.
9. Decoration: conventionalism. Natural foliage as material. Modes of arrangement.
10. Résumé: Outline the work for each grade, village, and city school. Character of results; care of material.

If I expected to return to the institute of a given county two or three years in succession, I would not try to cover all of the above ground the first year, but do less more thoroughly. I believe it is our duty to look after the great mass of children in country and village, and lead the authorities in our respective States to see that here is a means of reaching them, as effective, perhaps, as any that can be named, if the care is taken to engage the services only of those qualified for this special work.

A concise paper on "Drawing in High Schools" was read by Professor W. S. Perry, of Worcester, Massachusetts, the President of the Art Department, from which the following brief extracts are taken:

* * * . I would, first of all, emphasize, if possible, what I said in my opening remarks, Wednesday afternoon. Drawing is becoming more fully recognized as a factor in educational work. Not alone for its own individual importance is it taught, but that through its acquisition other studies may be more fully and practically taught. Perhaps this last sentence may not be fully understood, but I mean just this: When a pupil produces a piece of work through a great amount of labor, which work is simply a copy of some lithographic print or some very poor original, and it is done that the pupil may possess a so-called picture when finished, such work, I say, is not educational. It has no place in the public schools or any educational institution, or if it has a place at present it is sure not to have one in the near

future. It is about time to stop deceiving the pupils into the idea that they are really learning to draw when doing such work. It is time for honest educational work.

"What a vast stride has been since the exhibition at Madison!" has been remarked on every hand. The improvement in drawing in general has been great. A large part of the space occupied by superficial copy work in wretched drawing, shown at Madison in 1884, is to-day covered by far better work. Too much, however, remains; but it is certain that the general school teacher and superintendent are becoming educated through these exhibitions, and it is only a question of time, and that short, I hope, when we may see drawing placed on its proper basis, with its course of study clear, educational, and comprehensive in its development.

I make myself emphatic, perhaps, but I would that I might speak with even more emphasis.

I have recently visited art, public, and various industrial schools during an extended tour in a great many of the different States, and there is no question but that the school officers are gradually waking up to the realization of the subject, and are learning what should be taught. Certain it is that we are not teaching drawing, nor are we teaching art, when the pupil is taught to simply make a wretched copy without any knowledge of the underlying principles. As much sense is there in it as there would be in copying Greek text in order to make perfect Greek letters without knowing anything of the translation, or the poetry back of the translation.

There are a few things needed in order to teach drawing in the high school. First of all, a drawing-room; second, models.

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There may have come to your mind the thought that too much stress in this paper has been laid upon the way of doing the work. But I have otherwise covered the subject once, and I know it is often said that all we are to do is to teach the pupils to see and never mind the method of gaining the result. But many a pupil is hindered from giving expression to what he has seen because he has not discovered an economical method of expression. He works and works on a drawing, all the time making it look worse, and realizing it; but, not knowing the reason, he becomes dissatisfied and discouraged.

Last year I had the best work from the first year classes I have ever had. Every morning of drawing the pupils were given a short class exercise of a very few minutes on the use of materials, how to look at their objects, and how to correct their drawings; and for six months scarcely any individual work was done. As I have said, the work was the best I have ever had, and yet, fully twenty-five to thirty pupils were in the room every three-quarters of an hour in the beginners' class alone, besides pupils studying mechanical drawing, and light and shade, and color, to the number of twenty-five to forty more.

The time is short, and I make my paper brief, preferring that others to follow shall take the greater part of the time, or that it may be given to discussion.

A very practical paper on Drawing in Normal Schools was read by Harriet Cecil Magee, State Normal School, Oshkosh, Wisconsin.

The report by Miss Locke on "Drawing in Normal Schools" fills some five pages, recites the sending a circular letter with questions to principals of Normal Schools and their replies.

The subject as to Normal Schools is summed up as follows:

DRAWING IN NORMAL SCHOOLS.

Looking back to three years ago, when the first circular for similar information was issued by this department, your committee can see much growth especially in systematic teaching and a more general recognition of common principles. There is still, however, much aimless work since only a certain amount of instruction can be covered in a course of three hours per week, for two years. A careful selection of work becomes necessary, those fundamentals being retained which link themselves to instruction in the other branches, and which also possess an educative and disciplinary value. Thus the principles of free-hand perspective are essential to all pictorial and illustrative work, while for developing the judgment and right thought concerning appearance in space, they are equally useful.

Your committee believe that adherence to pedagogical principles should prove as true in drawing as in number or geography; "the concrete before the abstract;" "the simple before the complex;" "wholes before details," are self-evident axioms. Because the mind of man is identical with the mind of the universe, there should be organic growth in the instruction, the stages of which ought to conform to the same general laws as in other studies, and which are commonly received as 1, nurture; 2, discipline; 3, culture.

Nurture—the nourishing of thought and the stimulating to self-activity, belongs in the primary grades.

Discipline—leading to self-control and freedom, should be the out-growth of instruction in the grammar grades.

Culture—whose end is participation in the thoughts of others, and enjoyment for its own sake, must be the final outcome of art training in college and university.

The measure of the instruction in normal schools must be determined by the possibilities of the graded school. Continually are children found to assimilate instruction and develop ahead of the teacher. Educate the teacher! Educate the teacher! is the need of the hour.

No serious-minded person believes for a minute that the present status of drawing in education is the highest it is to take; rather is it in a pioneer condition, possessing certain permanent features, but burdened with many excrescences which the future will assuredly eliminate. Hence normal-school teaching must be of an elastic character, self-culture subordinating itself to professional preparation, which, in its turn will conform to the growth and progress of the graded school—a by no means fixed quantity.

As the tendency of modern methods is to relate closer the several studies, each finding in the other its complement, your committee look for an increase of intelligence and an economy in time, that shall make it possible to pursue certain directions farther. The human family is in a perpetually shifting condition. Our education needs to be of a character not only to impart present wisdom but to lift us higher than it finds us. Your committee hope to see the term "teaching drawing" merged into the larger meaning of "art education," to secure which they would recommend the following:

RECOMMENDATIONS.

1. That students entering the normal school be required to show some previous preparation.
2. That the course of study shall conform to the needs of the district graded school.
3. That this subject shall be recognized both as an end and a means. As a means, it is to be used in making any information more intelligible through illustration; as an end, it is to be studied for the culture and æsthetic value to be derived from it.
4. That the time allotted shall extend uniformly through the entire course, and be not less than three hours per week.
5. That long periods of eighty minutes, for the conduct of exercises, be recommended in preference to short ones, of forty minutes each.
6. That this committee endorse most heartily the course of study adopted at Madison, and urge its adoption by all normal schools.
7. That schools be encouraged to the establishment of properly fitted up rooms and to the collecting of suitable material for teaching."

The report then proceeds to consider High Schools and says: "The condition of drawing in these schools is not satisfactory; in only a few is it receiving a moderate degree of recognition, a fact largely due to the slowness of our educators to recognize it as an element of a liberal education; ignorance and lack of force in teachers employed has also much to do with it. People still persist in regarding art instruction as a specialty, whose end is in itself, rather than a study whose disciplinary, intellectual, and æsthetic value brings it in the closest union with all that is human. The morals, thought, and art of a people are a unity and not a diversity.

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In view of these considerations your committee would recommend:

1. That wherever practicable, more time be devoted to this study; three hours per week seems reasonable.
2. That exercises be increased in length, by combining two of the present forty-five minute recitations.
3. That specially fitted up rooms be provided by school boards.
4. That art instruction be made obligatory upon all students as an element of a liberal education.
5. That the theory and history of art shall not be separated from the practise, but that they shall be taught connectedly, the practise preceding the theory.
6. The union of the constructive element with the graphic. Knowledge of material and structure to accompany line and surface delineation.

7. That the regular instructors require from students illustrations in the form of sketches of work done in the sciences, mathematics, zoology, physiology, the study of history, etc.

8. The employment of only competent and educated instructors.

So shall recognition of art in high schools have a two-fold value: 1, As supplementary to the general school work, as a means of clearer realization of knowledge; 2, Learning to create and enjoy the beautitul for its own sake.

[Signed,]

John Hancock,
John M. Ordway,
Josephine C. Locke."

PROCEEDINGS AND ADDRESSES AT THE DEPARTMENT OF ART EDUCATION AT THE SAN FRANCISCO MEETING.

DEPARTMENT OF ART EDUCATION.

SECRETARY'S MINUTES.

First Session.

San Francisco, California, *July* 18, 1888.

The Department of Art Education was called to order by the President, G. H. Bartlett, of Boston.

The Secretary of the Department being absent, on motion of Miss Locke, of St. Louis, T. J. Richardson, of Mineapolis, was selected to act as secretary during the session. The proceedings were opened by the President, who delivered the annual address.

The next event on the programme was a paper by L. S. Thompson, of Lafayette, Indiana: "Is the Educational Value of the Construction of Objects in the Public Schools Over-estimated?"

The discussion of the paper was participated in by Miss Locke, who deprecated the tendency to make the study of objects an independent craze; by Mr. Bailey, who asked whether Mr. Thompson considered modeling in clay of educational value enough to warrant its introduction into all the grades; and by Mr. Ames, who would limit *making* strictly to *drawing.*

The following committees were then appointed by the Chair:

Committee on Nominations—L. S. Thompson, Lafayette, Ind.; M. H. Bancroft, Pennsylvania; and P. A. Garrett, California.

The President, after a few remarks, appointed as a committee of specialists, to report on the merits of each and every exhibit of the art department at the Pavilion, Albert H. Munsell and H. T. Bailey, of Massachusetts; Theo. J. Richardson, of Minnesota; and W. G. Raymond, J. J. McQay, and Miss R. F. English, of California.

The next paper was by Henry T. Bailey, of Massachusetts, on "Historic Ornament and Design in Our Public Schools." The paper was illustrated by blackboard sketches and prepared charts.

After a short discussion, in which the paper was generally commended, the meeting adjourned until Friday afternoon at half-past two o'clock.

Second Session.

July 20, 1888.

At 2.30 the meeting came to order, with President Bartlett in the chair. The Secretary's minutes were read and approved.

The Committee on Nominations reported the following list:

President—Langdon S. Thompson, Lafayette, Indiana.
Vice-President—Theodore J. Richardson, Minneapolis, Minnesota.
Secretary—Miss M. Louise Field, Boston, Massachusetts.

The nominees were elected by acclamation.

The Committee on Art Exhibits then presented its report.

The President, G. H. Bartlett, then read a paper on "Free Industrial Evening Drawing Schools." An impromptu discussion of the paper followed, in which a number participated. Mr. Thompson thought "manual training should be introduced into the grammar schools." Mr. Richardson mentioned the old-fashioned jackknife as something always ready and reliable for a grammar-grade boy. Mr. Bailey seconded the remarks, and in answer to the question, What shall the girls do? claimed that the girls could out-whittle the boys. Mr. Bancroft pleaded for manual training, for the intellectual development it affords. Mr. Entz wanted more unity of tastes on these subjects.

Albert H. Munsell then read a paper on "The Importance of a High Aim in the Teaching of Drawing."

The meeting then adjourned *sine die.*

T. J. RICHARDSON,
Secretary pro tem.

It will be seen from the titles of papers given in the preceding minutes that one paper was given to "Construction work," and one to the "Free Industrial Evening Drawing Schools." This last paper was a very interesting statement of the importance of these schools, by Mr. George H. Bartlett, the President of the Department. As Director of the Massachusetts Normal Art School, and as having himself been in charge of two large Evening Schools in Boston for seventeen years, Mr. Bartlett speaks with authority and his testimony to the benefits derived from attendance on these schools is of great weight.

Schools of this class were, however, fully considered in Part I, of this Report.

The interesting paper by Mr. Bailey on "Historic Ornament and Design in Grammar and High Schools" was listened to with close attention and was generally approved. It was substantially the paper subsequently read before the Massachusetts Industrial Art Teachers Association, and has already been quoted in this Appendix in the account of their annual meeting in Boston, January 1889. (See page 1275 *et seq.*)

The following paper by Mr. Munsell, with which the session ended, treats eloquently and ably a most important phase of Art Education.

The final pages here taken in full, give concisely a clear statement of the various methods adopted by France, to educate her people in art knowledge and to develop art production.

France offers to the rest of the world, and especially to the United States of America, a most impressive object lesson of the utility of definite education in art matters, and of how much a government can do directly for the development of Artistic Industries. Not only the Government of the United States but that of each of the several individual States might profitably heed the lesson.

IMPORTANCE OF A HIGH AIM IN ART EDUCATION.

ALBERT H. MUNSELL, BOSTON, MASSACHUSETTS.

Let me ask your sympathetic attention to a plea for breadth of view and nobility of purpose in matters of art education.

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Drawing is no longer considered an accomplishment or special gift, but is become a means of education throughout the land. From a mere training of the senses, there is every grade of aim possible, up to that which sees in drawing a means of refinement, an ennoblement of the character, as it learns to cherish the true, the good, and the beautiful—something which opens the mind to a study of nature and a growing appreciation of its most masterly expression in art. By means of this study the teacher discovers latent aptitudes, and can save many a youth from mistake when the time comes to choose an occupation.

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To resume. The public school must be the chief factor in any broad-spread taste for art. We should therefore scrutinize its tendencies, striving to remove all narrowness and error, and aiming at a large treatment of the subject of art education which shall make it a source of inspiration to every mind, in whatever line of effort the future may determine. Not as mere skill of hand, nor amusement, nor trade; but a new medium through which the mind may receive and give impressions, appreciate the great works of the past, and aid in the production of a great art in the future.

HOW THE TEACHER MUST AID THE ART DEVELOPMENT OF THE PEOPLE.

The teacher must bear a most important part in this development. It is what we are, rather than what we say, which leaves a final impression on the pupil. We must cultivate our own art-nature, cherish true ideals of living and thinking ourselves, before we can impart them to others. As a safeguard against weariness and depression, we should surround ourselves with all that is best in art. Those heart-throbs which have crystallized in form, color, and song, possess a magic which makes life ever young; and in accepting this vocation as a service to mankind, our work lays hold on eternity.

Thus far we have considered the part of the teacher and the public school in the development of art instincts. This is the root of the matter, and sends its vitality up into all branches of the social system.

THE RIGHTFUL PLACE OF THE STUDY OF DRAWING IN PUBLIC SCHOOLS AT LAST SECURED.

In matters of art education, America need not be ashamed to show the progress of the last twenty years. Drawing, after a long struggle with false notions, has vindicated its right to a place in the public-school system, and is considered essential to a good education, not for its intrinsic value alone, but as an aid to the clear understanding of many another subject. Its benefit to the mind and the body, to our home-life and our industries, are no longer questioned. It sends students better prepared for the technical and art schools that are opening up in all our cities.

AMERICAN STUDENTS IN EUROPE.

From these, scores of students go annually to Europe, to gain a broader training. If they cherish no ideal, if their moral or physical strength is defective, if an abundance of money makes vice attractive, then there is danger that they will return spent in mind and body; or worse, ashamed to face those who knew them, they may drift about foreign cities, the fair promise of their lives blighted by a mistaken course. Those who watched over their early years may well ask themselves, where lies the blame? If, on the other hand, they are serious and high-minded, if they cultivate vigor of mind and body, theirs is an excellent opportunity to gain distinction. Enlivened by a new existence, free from the claims of society and business, in a rich art atmosphere and stimulated by contact with great masters, their progress is remarkable.

AMERICAN ART STUDENTS IN FRANCE.

So much have they made themselves felt in the schools, and at the Paris Salon, that the question has been lately raised, whether there might not develop in the near future an American school of art; whether the novelty of our life, its peculiarities of climate and race, might not furnish the germs of a new movement. Several of the French professors, who having had Americans in their classes are able to judge of them as students as well as of their art, have lately written an opinion on this question. They dwell on their earnest, quick, vigorous spirit, but regret that they do not longer pursue their studies before attempting to create. There are those who give some faint hope of a national movement near at hand, but the weight of opinion sees in the lack of collections, traditions, and that public sentiment which only several generations of effort can supply, elements which will make it necessary for us to still follow in the footsteps of an older art. Indeed, history shows plainly that the art epochs of other races have come as the flower of complete civilization, almost the warning of decline. The Renaissance was an awakening of the entire nature. It required a widespread taste for fine literature and music, as well as the arts of design, to create such versatile and masterly men as Da Vinci and Michael Angelo. Poet, sculptor, architect, painter, military engineer, each field of knowledge enriched the others, and a long life of constant effort made them well-nigh perfect in all.

NEED OF ART CULTURE IN AMERICA.

To-day the tendency is quite the reverse. Knowledge is specialized; versatility carries a suspicion of shallowness, and we have a proverb for the jack-of-all-trades. There is also a commercial spirit which chills the aesthetic side of our nature, and an existence so hemmed in by daily cares that it cannot breathe the repose necessary to a great art. It is evident to the casual observer that an intelligent love of the beautiful in art and nature is not yet dominant, and until it shall have become inherent in the national character, no important or individual expression of our life can appear. Our task, therefore, seems to be the laying of a foundation on which coming generations may raise a noble structure; a foundation so strong, so broad, so well proportioned, that it need not be repented of in after years.

HOW FRENCH ART WAS FOUNDED AND DEVELOPED.

If we accept this as our duty, there is no lack of suggestion to be gained from the experience of older movements; and we may avoid their mistakes, adopting only such ideas as commend themselves to the new conditions. Since the days when Francis I. laid the foundations of the Louvre and called Leonardo, Cellini, and Andrea del Sarto, to his court, France has steadily developed a national taste for the fine arts; and in spite of repeated revolutions, her schools, museums, and art manufactories have grown, until to-day they constitute her chief wealth. Her statesmen well know that the interests of art are so closely interwoven with those of industry that the decline of one would impoverish the other. It is therefore fostered by the government. A ministry of the fine arts, allied to that of public instruction, studies every means for its advancement, and is intrusted with the expenditure of an annual budget of several million francs. In defining the claims of the fine arts upon national protection and aid, one writer says: "Product of the highest faculties of man, of his most noble sentiments, of his aspirations towards the ideal, they constitute in turn a productive force which reacts on all society. A people may live, grow, govern even, without the fine arts; but among an artistic people the decline of the arts involves with itself a loss of riches and a revolution of morals so profound that the ruin of the fine arts would be indeed that of the country. . . . The artist of genius has doubtless only to act, but this genius even can only hatch in an artistic atmosphere, and it is this vivifying atmosphere whose pressure must be preserved at any price."

REVIVAL OF FRENCH EFFORTS RESULTING FROM THE REVELATIONS OF THE PARIS EXHIBITION OF 1878.

This was written at a time when France had suddenly become aware of the surprising advance made by other nations. Her easy victory in the London Exhibition of 1851 had given a false sense of security. The Paris Exhibition of 1878 proved that nothing but a most vigorous move could insure her continued supremacy in a race where those who had begun as imitators now appeared as rivals. She has therefore elaborated a most comprehensive system that touches every kind and grade of instruction, from the primary school up to the National School of Fine Arts in Paris and the Academy at Rome. To the latter she annually sends a painter, a sculptor, an architect, an engraver, and a musician, chosen by severe and repeated tests from among the flower of her youth, there to enjoy four years of culture under conditions which recall the courts of the Farnèse and the Medici.

WHAT THE MINISTRY OF FINE ARTS IN FRANCE COMPRISES.

The administration includes six bureaus, of which the first three,—Art Works, Instruction, Museums and Exhibitions,—specially interest us.

I. Under *Art Works*, come the decoration of public buildings; grants for the erection of public monuments and statues; orders and purchase of paintings, sculptures, engravings upon medals, precious stones, copper-plates, etchings, lithographs, etc.; their distribution among establishments other than museums (that being in the care of section 3); purchase of French and foreign marbles; moulds for public edifices, orders and purchase of copies for establishments other than museums; journeyings and missions, traveling purses; annual indemnities, assistance and encouragement to painters, sculptors, engravers, and their families.

II. Under *Instruction*, are the French Academy at Rome; the National School of the Fine Arts at Paris; the National Schools of the Decorative Arts in Paris and the Departments; the National School of Design for Young Women at Paris; the

National Schools of the Fine Arts at Lyons, Dijon, Bourges and Algiers; the Municipal Schools of the Fine Arts and Design in the Departments; the inspection and teaching of Design; the Pedagogic Museum of Instruction and Design.

III. The third bureau (*Museums and Exhibitions*) is in charge of the National Museums (Louvre, Luxembourg, Versailles and St. Germain); purchases for these museums and settlement of expenses; departmental and municipal museums; distribution of state purchases among these museums; subscription to works of art and their distribution; preservation of collections in legal trust; publication of the inventory of art riches in France; annual reunion at the Sorbonne of Fine Art Societies from the departments; publication of returns; exhibitions of works of art at Paris, in the departments and abroad.

The remaining three bureaus—*Historic Monuments*, *Theaters* and *National Manufactories*—hardly touch us, for they are closely allied to and mainly the outcome of a monarchical government, which patronized theaters, built palaces, and established royal manufactories for their embellishment.

The first three, however, are rich in suggestion, showing how the state cares for every branch of art. With certain modifications they recommend themselves to our needs.

THE HIGH COUNCIL OF ART IN FRANCE.

The history of the Blair educational bill would not lead us to expect any aid from the Government at Washington. It even seems doubtful if such action falls within its province. But in each state the board of education, or a council, could be so constituted as to include one or more art manufacturers, artists, and art amateurs, charged with the care of the art interests and their many relations to education and industry. France has such a High Council, composed of fifty-two members, of which the first fourteen are *ex officio:*

The Minister; Under Secretary of State; Director of the Fine Arts (the last two are vice-presidents); prefect of the Seine; perpetual secretary of the Academy of Fine Arts; director of civil buildings; general inspector of the teaching of drawing; vice-president of the Commission on Historic Monuments; administrator of the National Museums and keeper of the Luxembourg; directors of the School of Fine Arts, Conservatory of Music, and School of Decorative Art; general commissioner of Fine-Art Exhibitions; president of the Society of French Artists. The remaining thirty-eight are annually named by the Ministry; twelve artists chosen in the Institute or outside (six painters, two sculptors, two architects, one engraver, one musician); a member of the French Academy; a member of the Academy of Inscriptions and Belles-lettres; two members of the Higher Council of Public Instruction; two senators; two deputies; a state-advocate; one member of each of the superior commissions of Sevres and the Gobelins; two representatives of the arts applied to industry; one inspector of the fine arts; two chosen for competence in art matters; two secretaries having deliberative voice, chosen from the central administration of fine arts.

THE SEVERAL STATES OF THIS UNION SHOULD IN LIKE MANNER CARE FOR THE ARTISTIC INTERESTS OF THEIR CITIZENS.

With such a formidable array of experts, selected for their fitness, to watch over her art, is it any wonder that Paris should be the center of the modern movement, with an annual Salon of over seven thousand works? *It is high time that some of the older states in this country should make a move in this direction. There will naturally be opposition to any very liberal expenditure until the community shall have been educated up to its compensative power. It may only be possible through private endowment. But in the manufacturing states, no other line of investment can yield so rich a return.*

The National School of Fine Arts, at Paris, stands as a noble example to any state that would foster Art in its broadest relations. A university of painting, sculpture, architecture, and engraving, conducted at public expense, entered by means of a competitive examination that excludes about four out of every five, and holding out as a goal the highest honor which France can offer to a young artist—the *prix-de-Rome*, four years of travel and study, with all expenses paid, and the probability of some government commission upon his return.

If such a school existed in the capital or chief city of a state, each town could establish a scholarship for its most promising student under a certain age; while the school itself might choose by annual competition a student to be sent abroad for two or three years. In this way, the hope of a liberal education would appear to every talented and serious youth, be his surroundings never so obscure, while his efforts and success would so arouse local interest as to educate the community. One such scholarship already exists, thanks to private beneficence. The Rotch Architectural Prize sends a student abroad for two years with an annual purse of $1,000; each in turn acting as a senior to advise the newcomer in practical questions of travel and expense.

But this should not stand alone. Scholarships for painters, sculptors and engravers are just as necessary, and if they could be related under one administration, the departure of four picked men, and the return of four to enrich the community with the fruit of their studies, would be an event of the art-year. A most important factor in any such competition is the jury. It must consist of members whose age, character and attainments will vouch for an impartial and discerning decision, and of sufficient number to insure a good quorum under all circumstances.

Such a system of encouragement cannot leap at once into perfect working order. But the initiative must be made, and will be a lasting source of pride to the state and the individuals who originate it. It will be a highway for the artisan and artist, starting from the public school and permitting the talent or genius of each individual to determine how far he will push his way, and where he will remain to work out his share in art progress. Whether he find congenial exercise in industry, in pictorial, plastic, decorative, or architectural art, or as a patron and amateur, the road is open, not only for him to travel, but as he travels to go arm-in-arm with his fellows and gain by the interchange of ideas.

AMERICAN ART MUSEUMS.

Already, museums and annual exhibitions are educating the public to an intelligent love for art. Though small as compared with European collections, they form a nucleus around which gifts and purchase will constantly accumulate, and the perfection of modern casts and reproductions can atone in some degree for the absence of original masterpieces. Yet the old marble and canvas glow with a depth of color and eloquence which no copy can reproduce. In them we seem to touch the very soul of beauty, and it is to be hoped that some of the vast wealth accumulating in America may compete with foreign bids, and enshrine among our people some such sources of inspiration.

HOPE FOR AMERICAN ART IF WISELY ENCOURAGED.

Lastly: There would seem to be in the American temperament, the elements of an intelligent art movement. But they need to be judiciously organized and stimulated by scholarships and prizes, which shall search out the latent talent and give it means for development. Until such aid is given, although the movement has a certain dash and brilliancy, it will lack the breadth and depth indispensable to a grand art.

Nature seems to have permitted every healthy child to run the gauntlet of certain ailments, whose energy is in proportion to the robust nature which exhibits them. Having been thrown off, they prepare the way for a vigorous aftergrowth. If, therefore, there are mistaken tendencies in our art, if undue stress upon little things tempts us to forget greater, or if a complacent superficiality stands in the way of more sincere effort, let us believe them due to our youth in art matters, incident to rapid growth, and that, being corrected, they will leave the system in a wholesome condition for further development.

THE EXHIBITIONS OF THE ART DEPARTMENT AT CHICAGO AND SAN FRANCISCO.

At the annual meeting of the National Education Association besides the formal reading of papers in the general meetings and in the several departments, a comprehensive exhibition of school work and apparatus is shown, contributed by each Department.

The display at Madison in 1884 was thought at the time to be almost phenomenal, but it is now claimed that it was surpassed by that shown at Chicago.

That at the San Francisco meeting was also highly commended, but there was naturally not so large a showing made by the Eastern and Middle States.

The following report of the Exhibition at Chicago, by Miss Josephine Locke, will be found of interest. This enthusiastic and successful teacher is fully competent to pass judgment upon the Drawing work of schools.

REPORT OF THE EXHIBITION OF THE ART DEPARTMENT.

GEORGE P. BROWN, *Chairman.*

DEAR SIR :—The exhibit of the Art Department at the annual meeting of the National Educational Association, held in Chicago, July 15–18, 1887, was in many respects the most valuable one, educationally considered, that has ever been made. There were exhibits of public school work in drawing, from Chicago; St. Louis; Columbus, Ohio ; Worcester, Massachusetts ; Cincinnati, Cleveland, Moline, Toledo, etc., as well as a full exhibit of representative work from the Massachusetts Normal Art School, an institution which has influenced most largely art instruction in public schools.

One could not help seeing the growth made since the Madison exhibit, in 1884. This does not mean that there is not still much waste in the instruction, or that there were not many vagaries indulged in, and not a few bad drawings exhibited ; but enough unanimity as to a rational standard was evinced, sufficient to show that the study has been carried to a point which places it beyond the character of an experiment.

AN HISTORICAL SUMMARY.

In order to present an intelligent criticism upon the work exhibited, it will be necessary to consider briefly the history of drawing, such features of instruction as are now recognized as forming the proper basis for teaching, and how they have been established.

It was in 1860, that drawing first appeared on the programme of the Boston public schools, and from that time, and place, may be dated the birth of the work. The passing of an act by the legislature of Massachusetts, in 1870, making drawing one of the studies in the public schools, and also making the establishment of free drawing classes for adults obligatory upon all towns and cities, with the calling of Mr. Walter Smith from England, in 1872, and the founding of the Massachusetts Normal Art School, in 1873, are milestones marking epochs of growth.

In July, 1879, Mr. John S. Clark, of Boston, in an address before the University of the State of New York, first proposed a classification of drawing into the three subjects of construction, representation, and decoration. Previous to this, as in England even now, the term free-hand was applied only to copying from the flat, while other work, done just as much with the free-hand, was spoken of as model and object drawing ; yet model and object drawing involved a knowledge of perspective, but no one applied the term perspective to it, but to another class of work, which was done with instruments so that to the popular mind, terms and subjects were very much confused, and Mr. Clark's classification was a universal relief, hence its ready adoption. This classification bases itself on the difference between the structure, the appearance, and the ornamentation of form.

While other cities have also engaged in solving the problem, yet to the Massachusetts movement is due the intellectual and educational thought, which has given impetus and vigor to the work, and which has lifted it to its present position.

Hon. John D. Philbrick, Mr. C. C. Perkins, and Dr. A. A. Miner, are too closely interwoven with the progress and success of the work to omit mentioning, and their names must ever remain dear to the pioneer teachers and students of that time. In the future, when free art instruction has become a realized fact, the unselfishness and devotion of the Massachusetts leaders will be recognized as it is not now. There have been other art schools, excellent in many respects, but none that have so influenced public sentiment, or opened the doors of art instruction to the common people, as the Massachusetts Normal Art School.

THE STUDY OF DRAWING AFFECTED BY THE MANUAL TRAINING MOVEMENT.

During the past fifteen years, the character of the work in the public schools has been considerably modified ; the work in kindergarten and manual training has very much influenced its methods of teaching, and somewhat changed its direction. Instead of existing as a special study for special ends, it has been lifted to a broader and more pedagogical platform, and is now taught as a necessary element in general training, because of its aesthetic and educational values. The study has not yet reached its full and proper extension and development, but so much has been accomplished that the character of the work to be done, and the best methods of instruction to pursue can be predicated.

THE REPORT ON DRAWING MADE TO THE MADISON MEETING IN 1884.

At the annual meeting of the Educational Association, held at Madison, in July, 1884, a committee, chosen at the previous meeting of the Association, at Saratoga, made an exhaustive report upon the general condition of drawing in the public schools of the country. The inquiries of the committee were very thorough; they found such a wide diversity in methods of instruction prevailing, as well as in results obtained, that they were induced to recommend a somewhat detailed course of instruction for primary, grammar, high, and normal schools.

This course of instruction was the first course in drawing prepared for public schools, entitled to be considered authoritative. The chairman of this committee was the Honorable James Mac Alister, superintendent of public schools of Philadelphia. Associated with him were Professor Otto Fuchs, of the Maryland School of Industrial Design, and formerly principal of the Massachusetts Normal Art School, the supervisor of drawing in the public schools of St. Louis and Columbus, as well as the instructor of drawing in the Chicago schools. The competency, therefore, of this committee to pass upon the question of what should be taught as drawing in public schools, either from an educational or technical point of view, will not be questioned. The course of study recommended in this report, was based upon the observations of the committee in a number of schools where good work was being produced, and its general features were as follows:

In primary schools, that perception of form should be the basis of the instruction. The course should begin with the study of solid models, and the plane geometric forms derived from them; then should follow the study of objects based on these solids and irregular forms. Pupils to mould the solid forms, the plane forms, and common objects; also to make simple arrangements of them, and then to draw the solids, the plane forms, the objects, and the arrangements.

In the grammar course, acquisition of principles should be aimed at; the instruction of the primary course should be developed into the subjects of constructive drawing, representative drawing, and decorative drawing.

In the high-school course, these three subject divisions should be carried to their technical applications in constructive, pictorial and decorative drawing and designing.

Models and objects should be used as the basis of instruction throughout the entire course.

The course recommended by the committee, was received with general favor, and has been adopted in many of the best schools of the country. It is a course which recognizes the practical value of drawing in the vocations of common life. It also recognizes the great value of drawing in education, as a means of aesthetic culture. It was not a matter of surprise, therefore, to find in the Chicago exhibition, a number of exhibits of well developed courses of study in drawing, conducted according to the plan recommended by the above committee. The exhibit comprised.

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The list of articles shown are here omitted, as they are avowedly the programmes of courses in the various grades of public schools, with those of the Massachusetts Normal School course.

There was also shown a set of drawings from the Mechanics' Institute of Rochester, New York, which included the work in the Mechanical, Machine, and Architectural classes, with a two years' course in Freehand, and one year in Design.

Miss Locke remarks in her comments upon the Exhibition that,—

* * * "It must not be understood that each city or school exhibiting had a classification answering to the above. These are the distinguishing features which were found scattered here and there. Some schools and cities had their work much better classified than others. There were exhibits from schools which seemed to be pursuing the study according to individual ideas, and in many cases it was extremely difficult to see the particular object or aim of the instruction. They made sudden jumps from one kind of work to another, but did not show a systematized growth.

For purpose of intelligent criticism, therefore, upon the exhibition as a whole, the exhibits may be divided into two classes: (*a*) Those which showed well-graded work through the several years of the schools, leading to well-defined ends. (*b*) Incomplete and disconnected courses.

Among the first class should be placed the exhibits from the special schools, like the Massachusetts Normal Art School, the Pennsylvania Museum of Industrial Art, the Mechanics' Institute of Rochester; while from public schools there were the exhibits from the primary and grammar schools of Chicago; the primary, grammar, and normal schools of St. Louis; the Winona Normal School; the primary, grammar and high schools of Worcester, Mass.; the primary, grammar, and high schools of Columbus, Ohio.

THE MASSACHUSETTS NORMAL ART SCHOOL.

Taking these exhibits in order, we have first the exhibit of the Massachusetts Normal Art School. The exhibit from this school was the most striking feature of the whole exhibition, as it showed to what broad, practical, and educational ends public instruction in drawing in America is tending. No person, familiar with the work of this school in years past, could have failed to notice the very great broadening of the instruction in nearly every direction. There was an absence of the laborious, painstaking, detail style, characteristic of previous years, the technique was exceptionally good, as was also the artistic freedom and finish; the normal instruction, too, has completely changed under the influence of the work in public schools. Indeed, the instruction in all the departments seems to be on a very much broader educational basis than in past years. It is not the province of this school to train artists or specialists, but rather teachers; and one could not help feeling, in looking at some of the excellent work exhibited, that if such work was being done by teachers, by those who were to use their artistic acquirements in public school work, public education would be largely enriched and benefited thereby. It is only just to say, we are indebted to the Massachusetts Normal Art School for much of the good work that is now done in the public schools. Until the establishment of this school there was no standard for what should be taught as drawing in public schools; and not until its students had clearly proved the practicability of teaching the subject in public schools, and also showed what should be taught as drawing, was it possible to lay out a course in drawing for public schools, which should be logically and educationally graded on the basis of the subject matter to be taught. It was largely from observations of the public school work done by students from this school that the committee were enabled to lay out their course of study in the report referred to.

The whole course of instruction seems to be eminently practical, and to be tending more and more, through its provisions for normal teaching, towards lifting up public school work.

OTHER EXHIBITS.

The Pennsylvania Museum showed most excellent and very unique work in applied design, the manufactured article in each case accompanying the original drawing. The color work and work in light and shade was equally good and showed broad artistic treatment.

The Mechanics' Institute of Rochester, N. Y., although just beginning its career, made a most promising exhibit; its work is twofold in character, both scientific and artistic.

Of primary and grammar schools, Toledo, Chicago, Worcester, Columbus, and St. Louis show the same classification of work; they follow the course adopted at Madison; the exhibits from these cities were decidedly the broadest and most connected of any district school work shown.

Of high schools, Columbus and Worcester agree very much in their methods and results. Omitting the feature of pictorial work from flat copies, they conform to the classification of high-school work as stated above; all that these schools showed was excellent, both in composition and execution; they may be styled the banner high schools of the country in drawing.

The Cincinnati exhibit, in its grammar and primary grades, as has been stated, is homogeneous in character, but the instruction begins and ends with flat copies. This would be less objectionable were the copies thus drawn some beautiful, historic forms, which would be worth remembering, and which would improve the taste of the pupil; but while nine-tenths of the work done was ornamental in character, the forms used as guides were not classic. The system begins with drawing squares, dividing their sides proportionately, and filling them with symmetrical patterns. A great deal of half-tint is used. This is a great consumer of time, and make no educational return. Much care, accuracy, and neatness was observable in the reproduction of their copies by the pupils. The high school work was very ambitious and contained some happy thoughts.

The St. Louis normal school seems to be on a solid educational basis; there was a largeness and freedom to its work, very refreshing; in pictorial composition, and in line work from the cast, it probably excelled all others. It is to be regretted that this school has not as yet done anything with light and shade or color. But a logical sequence pervaded all it did do, one step fitting directly in the next above. It appears to have carried clay modelling further than most schools of the same grade, and to have gotten a good deal out of it, using it to reproduce designs already drawn on paper. We should judge this school wasted neither time nor effort; everything seemed done with a purpose for some definite end.

THE LESSON OF THE EXHIBITION.

The lesson of the exhibition, as a whole, was not a difficult one to read. The results exhibited will unquestionably have a great influence in henceforth shaping instruction in drawing in the public schools. It was clearly apparent that the study has come into the schools to stay, as one of the fundamental branches. It was also apparent from the work exhibited from the schools of Worcester, Columbus, St. Louis, and from the primary and grammar schools of Chicago, that a course of instruction has been found which will develop harmoniously the educational, industrial, and æsthetic features of the study. Hence cities and schools desiring to improve their work run no risk, but simply put themselves in line with their own highest good by following the course of study adopted at Madison.

To recapitulate: First, as to the character of public school instruction. It must be in the general subject of drawing, and not the developing of one side only. Thus practice in drawing ornament, or in plane geometry, may not be taught to the exclusion of free-hand perspective, and the study of the facts of form.

Second, it is not sufficient to practice drawing just because it is of assistance in illustrating other branches. The great classics in form, in line and in color, as in literature, must be studied for their own sake, because they are the most nutritious food for even the youngest minds.

Experience is that he who has been first trained in the study of regular and geometric forms from the object, makes wonderful progress when he comes into contact with irregular and complex forms; hence the practice of illustrative drawing must always be the outgrowth of a rational, systematic training in the general principles of drawing; as an authority says, "Those who have acquired a readiness of hand without correctness of study, have but the shadow instead of the substance." To put sleight of hand, or mere dexterity of manipulation first, is to exalt the frivolous and render difficult a return to serious artistic or scientific drawing. An art development, as the result of beginning with the pictorial and illustrative side has yet to be proven; it would probably result in a ratio comparable to that existing between Japanese and Greek art.

Third, the work must be at once progressive and continuous in its growth. The high school must be a continuation of the grammar; and the grammar, of the primary grades. It is not proper to introduce subjects and departments of work in grammar schools and high schools, when the same have not been handled in their elements, or under simpler conditions in the primary. Thus, if drawing from the object, or working advanced geometric problems belongs to the higher grades, so does a knowledge of simpler object drawing and simpler geometric forms, belong in the lower grades.

Fourth, instruction should begin with the free-hand, and not with instruments, because the former affords more exercise for the training of the judgment, the perception, and the intuitional faculties.

DRAWING SHOULD BE TAUGHT SYSTEMATICALLY AND IN LOGICAL PROGRESSION.

Fifth, all drawing must be based on sound pedagogical principles. Work done must be of a character to stand the tests of experience and philosophy. Meaningless lines and forms, like meaningless stories and trashy rhymes, are a waste of precious time and energy. Every drawing made by a pupil must definitely aim to develop either the intellectual or the æsthetic side of his nature, must provide nourishment for either his thought or his feeling; hence there must be no such thing as aimless copying of pictures or diagrams, because all such work permits a tyro to begin where a real or would-be master has left off. No instruction can be sound in practice, however pretentious its results, that is not first true pedagogically. So also, a rationald evelopment must not allow its theory to outstrip its practice. The simple before the complex, the concrete before the abstract, things before words, are axiomatic truths.

While there is a decided gain in the character of the exhibit, so that there is much less drawing from the flat and more from the object, yet the general school work is still too much in the imitative stage. True drawing should aim at being a translation rather than an imitation, it is a repeating of the same story in a different language. As Hegel says in his "Philosophy of Art:" "Of what use to reproduce that which nature already offers to our view? This puerile talk, unworthy of man's spirit, to which it is addressed of man who produces it, would only end in the revelation of its impotency and the vanity of its efforts; for the copy will always remain inferior to the original. Besides, the more exact the imitation, the less vivid the pleasure. That which pleases us is not imitation, but creation. The very least invention surpasses all the masterpieces of imitation."

This is why no amount of old time picture making by tyros, such as copies of impossible landscapes and the drawing of heads from the flat, can breed intelligence, or develop the thought that culminates in artistic feeling. We must begin by studying nature, or the object itself, for it is as vain to teach the theory of a beauty, which cannot be perceived or felt, as it is to teach the grammatical rules of a language which cannot be understood.

WHY ARTISTIC DRAWING SHOULD BE EARLY DEVELOPED.

Sixth, the development of the artistic side in drawing must take precedence of the scientific, on the ground that the intuitional and æsthetic faculties are strongest in childhood, and if not given development then, rarely show themselves later. Leonardo Da Vinci only late in life became acquainted with the science of drawing, after having practiced it long years according to the teachings of intuitional thought. So, also, with the Greeks, they were ignorant of the science of perspective, but the art of that period has never been rivaled. Hand work is of value only as it is artistic. The instrument and machine can be made to supply much that the hand cannot furnish, but this they cannot do,—they cannot supply the artistic element, either in the life or the work of a people. Refinement of perception and delicacy of touch are the result only of insight into and contact with the beautiful. The art faculty in every child must be given an opportunity to show itself. Says Emerson, "Beauty must come back to the useful arts, and the distinction between the fine and the useful be forgotten." But a yet stronger plea for the development of the artistic and æsthetic side of drawing with children is the fact of the great divorce which now exists between the occupations and amusements of the people. It is only by the wedding of genius to labor, only by the education of the inward eye of the toiler, so that he shall perceive the beautiful in what he does, that we can hope to transform his drudgery for him, or add the element of rational enjoyment to his existence. The good time coming is that in which the workman shall be friends with his work, and shall take pleasure in what he does; when all this overflowing energy, which now delights itself in the piling up of gold and silver, shall be led to see that man cannot live by bread alone, that "the most useful man in the most useful world, so long as only commodity was served, would remain unsatisfied. When preachers and teachers shall have the eyes of their understanding so adjusted as to find "antique sculpture as ethical as Marcus Aurelius, and the beauty ever in proportion to the depth of thought."

Excellent as our education is, it still needs a larger human side; the intellectual development of the people is running away with them; everybody knows so much more than he can put in practice. To restore equilibrium, we need a development of intuitional thought and feeling. The spirit of the kindergarten points this way, so does all true art instruction, whether in the time or space arts, because its tendency is to develop the silent, creative thought within, and by a series of efforts at realization on the constructive side, lead to the perception and growth of higher ideals. To think logically is not the same as to think poetically; to draw artistically is not the same as to draw scientifically; here feeling must take the precedence of knowing; to equally recognize and cultivate both sides in a human being is the duty of an all-round system of public education.

There are many beauties but the same spirit; to wake the intelligence to the perceiving of one, is an open sesame to the enjoyment of the others. The beauty of nature, of form, of sound, of color, of fitness, and usefulness of action and repose agree in the same essentials. To understand what simplicity, rhythm, harmony, or force means in one, is to enter into the enjoyment of it consciously or unconsciously in all the others. "The light that never was on land or sea" runs through the whole, binding them into a divine unity. Appreciation of the ability to create the beautiful may not be essential to man's longevity, but who dare say they are not to his immortality.

IMPORTANCE AND VALUE OF MODELLING.

Seventh, in all true art instruction, reproduction in the concrete should accompany line work. The plastic arts have ever been the product of a necessity—as deep as the world. Meaningless lines may exist on paper, they cannot in the object. In the study of ornament most of all is this essential. To get rid of superfluous lines and unnecessary parts, the pupil should model in clay or cut in paper. One such effort at realization is worth a dozen oral criticisms. It lifts the mind from paying attention to a detail, to considering the object as a whole, and any weakness or excess of material is easily detected. Susceptibility by touch and feeling assists the judgment; this actual handling of material is something not to be compensated for by years of line work, and fits directly into the study of applied design. This is also the best way to begin the study of the human face. By modelling each feature separately and finally a mask, an understanding of planes, of proportion of parts, and of truth of outline is acquired, such as mere line work cannot give.

In conclusion, your committee desires to say that they with gladness recognize the fact that American art instruction cannot be a copy or repetition of the work of any other age or country. Learning all we can from the experience of others, the very character of our institutions necessitates that we employ our own methods of reaching results; and as with us more than any other people, the child is lord of the play-ground it remains that such ways and means of imparting art instruction be followed which shall largest educate his general intelligence, and minister to the development of creative thought from within. The citizen first, the specialist second, must be the motto in this as in all other departs of our education.

Respectfully submitted.

JOSEPHINE C. LOCKE.

THE EXHIBITS OF SCHOOL WORK SHOWN IN SAN FRANCISCO, IN 1888.

From the general report of the Committee on Exhibition, made to Aaron Gove, President of the National Educational Association, during the session of the year 1888, held at San Francisco, California, are taken the following extracts, defining the different departments of school work represented in the general Exhibition. The report opens with an expression of regret that there had not been a larger number of sub committees, so that all the departments represented, could have been as thoroughly studied and reported as were those to which sub committees were assigned.

REPORT OF THE COMMITTEE ON EXHIBITION.

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"As in former exhibitions of school-work, beginning with that at the Centennial Exposition in Philadelphia, and even the excellent one at the Cotton Centennial in New Orleans, it is apparent that most of the work that is done in the school is of such a character that no exhibit can be made of it in the manner and methods devised in an exposition.

As the true work of the school aims first to develop in the pupil his power to think, and secondly, his power to use instrumentalities, it follows that examination-papers and original theses, inventions of designs in the arts and manufactures, commercial combinations, agricultural devices and literary works, will best show what education accomplishes that is of primary value, while in the secondary rank of reproducing from models of works of art and literature, displaying proficiency in sciences mastered and in arts practiced, there exist better means for showing what is accomplished. But without the presence of the pupils and their teachers, and the schools themselves, it is clear that very much is left out that is necessary to an exposition that shall exhibit the work of schools.

But there are phases of school-work whose function it is to put on paper what is to be seen at a glance, or prepare material objects by giving them shape and elaboration. Such phases can be exhibited with decided effect. It is manifest that our educational exhibits are tending toward the display of these phases of school-work to the neglect of all others.

Penmanship, map-drawing, freehand drawing, line-drawing, painting, embroidery, modelling in clay, kindergarten "occupations" (with their plaiting, embroidery, and modelling), fill up more space, and examination papers, compositions and such matters appear in less quantity. * * *

The full and admirable display made by the schools of the Pacific Coast and the meagre display made by Eastern schools due to their remoteness are here noted, after which the report proceeds as follows:

Manual training and technical schools, and especially the branch of study known in our schools as freehand drawing and industrial training, did their teachers great credit. It was a great good fortune to those interested in these educational movements to see Professor C. M. Woodward, of St. Louis, on hand in person, and to hear him explain his exhibit in his clear and impressive manner. It was an opportunity to see the deservedly famous founder of the wide-spreading system of manual-training schools. Professor John M. Ordway, of Tulane University, New Orleans, a distinguished laborer in the field of technical education, was also present at the Exposition and kindly assisted our committee with a report on some of the items of his specialty.

Considering the great importance of the apparatus of instruction,—such matters as school furniture, text-books, and means of illustration,—we report with pleasure that the exhibit from this source was creditable to those who took part in it, and no feature of the Exposition was more instructive to those visitors who came from remote districts where the newest and best models had not yet been seen. We must express regret, too, that more publishers and manufacturers of furniture and apparatus did not exhibit. Such an occasion, moreover, ought to have drawn out models and plans of school buildings, heating and ventilating apparatus, and the approved methods of lighting school-rooms from the left side and the back of the pupils. What our expositions lack in value because they fail to show first-class results in developing the thinking power of the pupil, is more than made up in this part of the exhibition by a display of apparatus, text-books, and model buildings.

The kindergarten, whose work is easily represented, formed a large feature in the exposition. San Francisco is one of the foremost cities in the land in the good work of extending and perfecting the kindergarten. This high position is due to a number of very skillful and devoted ladies who have labored untiringly and harmoniously to make the cause prosper on the Pacific Coast.

INDUSTRIAL DRAWING.

The cause of industrial drawing is in the ascendant, and it richly deserves it. In American arts and manufactures there is abundant ingenuity and technical skill. It is the lack of æsthetic taste which prevents American manufactures from making their way abroad in competition with the rival commodities of France and Great Britain. The old maxim, "de gustibus non est disputandum," is not true as an ethical mandate nor as a dictate of practical common sense. Works of art and ornament that shall command the markets of the world must pay their respects to the standard of the beautiful set up by the Greeks for all the world. Other standards may win a temporary vogue in this or that province, but they will not hold their own in different epochs, nor in many provinces of the world-market at any one time. The reason for this has been often demonstrated in works on the phioslophy of art. The Greek nationality alone, among all historic peoples, made a religion of the beautiful, and his definition of the beautiful may be expressed in our language as *the representation of freedom in material forms.*

Inanimate matter is caused to assume the form of the living body; it is made to conform to some inner purpose or design as though a soul dwelt in it and used this body of matter for the expression of its designs and the attainment of its purposes. The appearance of mathematical regularity and symmetry is the lowest order of the beautiful, a beauty that soon becomes tiresome to the spectator. In the teaching of drawing throughout the country there is evidently too much stress laid upon the two lower steps in art, the production of regularity and symmetry. It should pass through these steps on the way to the third step, the expression of harmony. Harmony alone, as something above the laws of regularity and symmetry, is the step that expresses the Greek standard. It alone expresses freedom. Harmony uses regularity and symmetry and subordinates them to the expression of purpose and design. It makes a unity of its ornament by making all its parts show an adaptation to the purpose of the soul within the work of art. For the artist endows matter with a soul. Just as the poet personifies and animates nature, so the artist personifies wood and mineral substances and makes them take on the semblance of life and free movement for the accomplishment of purpose. Around a vessel made of potter's clay, or wood, or metal, there coils a vine, choosing its path upward toward the light, but stopping at intervals more or less capricious to expand into symmetrical leaves, blossoms, and fruit. Around a vase are represented groups of joyful youth in action or in repose—a glimpse of the eternal spring-time of life. The vase itself in its contours spurns the simple geometric forms of the cube, the cylinder, or the globe, and soars away from these as though moved by a vital impulse from within to produce the oval or primitive life-form, and, not content with this, in the form of repose, it adds oval to oval, antithetically. It plays with lower forms in order to express its perfect freedom and spontaneity. It moves outward on an oval line and then inward again as though to close its egg-form, but changing its purpose it expands again in a reserved oval. It then stops suddenly and girds itself as though with some external cincture. But it plays only with this symbol of outward constraint, and manifests its freedom by escaping from its bonds and returning to its own chosen symbol, the oval. Thus the work of art expresses freedom. Man in all his races and conditions loves freedom and the expression of it. But the civilized races far surpass the savages in their appreciation of the highest order of the beautiful. The savage does not get much beyond a taste for what is regular, like a string of beads, in mathematical shapes. The next step above gets so far as to admire symmetry. Not finding the human body entirely symmetrical, he thinks to increase its beauty by tattooing symmetrical figures on it. In his images of his gods he makes them symmetrical by adding a face to the back side of the head, and placing another pair of arms at the back, etc. With the insight into harmony the nude human body becomes beautiful just as the Greeks modeled it. It must express action or the intention to act. Even the seated figures of Phidias have all their limbs under control and are apparently just on the point of action. Every limb is thus subordinated to the internal purpose, and this is the beautiful.

IDEAL ART MUST BE DEVELOPED.

Industrial art sets out with the laudable purpose to educate its pupils so that they may make our manufactures more salable by tasteful ornament. It is evident that more must be done in the direction of educating the ideals of taste, first. The pupils must not be kept on lessons in regularity and symmetry, as though any high order of the beautiful could be achieved in these. We shall never commend the markets of the world by adding such ornament to our goods. The soul of civilized man loaths mere repetition, or mere symmetry. Only the Chinese taste can endure the monotonous music of a tin pan through a whole day. The cultivated races love to see gracefulness of shape in their materials for food, clothing, and shelter. and in all their implements. Gracefulness is that appearance of freedom which we have already discussed. The soul in its depths feels its freedom, and loves to see this heaven-born attribute revealed in external shapes and forms. This is the significance of the beautiful. Things must seem to be for themselves, and not merely for usefulness for others. We do not like to see vulgar use stamped on the most useful objects even ; but we must feed our eyes with the appearance of self-activity and freedom as a sort of reminder that we are immortal souls, and not the slaves of our bodies, selling our heavenly birthrights for a mess of pottage, and toiling in thralldom for food, clothing, and shelter.

PRACTICAL IMPORTANCE OF ART CULTURE.

These reasons for the beautiful seem very transcendental and impractical to our average educational reformers. They think that children "should be taught to earn their livings by acquiring skill in carpenter-work and black-smithing." Their mistake would be ludicrous if it were not serious. "Production," said one of our most astute economists, Mr. David A. Wells, in 1884, "was never so great in this nation in relation to population as it has been in this last year of depression and want. The East is glutted with goods and wares ; the West with corn and meat ; the Middle States are burdened with coal and iron ; the South with cotton and grain ; and each section has all that the world needs." We are producing to much raw material and manufacturing too much common goods of a coarser quality. If we could put more taste into our manufactures—employ fewer people in raising the raw materials, and fewer in making coarse goods, and more in producing a finer quality of ornament—the balances would be restored. As it is, only one-twelfth of our laboring population are engaged in the wood-working and metal-working trades. In the twenty-five trades that belong to wood-working and in the twenty-two trades that belong to metal-work, there were in 1880 1,349,307 laborers. These provide more goods than we can sell at home and abroad. We cannot get and hold foreign markets unless we put more real taste into our ornament.

THE WOOD WORK OF SWEDEN LACKING IN ART QUALITIES.

This is the practical question. We have heard much of the Swedish education in wood-work. But when we have seen specimens of the productions of Swedish schools, the impractical character of that education has become obvious. The Swedish youth need precisely what our youth need, and what the youth of France and Belgium actually receive—education in real industrial art. Such wood-work as the Swedes make cannot command the market of the world like the productions of France and Belgium. In our great commercial year, 1881 (see report of Treasury Department, Foreign Commerce, 1881), we imported from Sweden only $137 worth of wooden manufactures, counting cabinet-wares, house furniture, and various other manufactures of wood. But we imported nearly a thousand times as much of this commodity from Belgium. As an amazing fact in contrast to this, in that same year we imported from Sweden and Norway nearly $40,000 worth of rags! In that year, too, we supplied our home market for wooden manufactures, except an important amounting to a million and a half, and exported $18,600,312 worth. We imported, also, from Sweden, $744,020 worth of iron in bar-iron, pig-iron, and old scrap-iron, buying it merely as raw material. But we purchased less than one-sixth that amount of manufactured iron and steel in that year from Sweden and Norway, not finding Swedish taste in manufactures to our liking. These are facts to be pondered by those among our people who pride themselves on having discovered the word "practical" as something opposed to the ideals of the soul.

THIS EXHIBITION UNFORTUNATELY SHOWS NO GAIN IN THE ART QUALITY OF DRAWING AS TAUGHT IN OUR PUBLIC SCHOOLS.

We have dwelt at much length on this defect in our industrial art education, because the exhibits at San Francisco indicated no improvement over former exhibits in this respect.

We append hereto ten special reports on various features of the exposition.

The aim of your committee was to procure estimates of that part of the work which formed the chief feature of the exposition from competent persons in attendance from different parts of the country, in order, if possible, to reflect all the standards of judgment prevailing. Had we succeeded in securing all the committees that we desired, we believe that the value of this method would be apparent.

Respectfully submitted.

W. T. Harris.
George T. Fairchild.
Langdon S. Thompson."

As stated in the foregoing report of "the Committee on Exhibition" ten special reports were appended. These comprised:

1st. The Report of the General Arrangements and Management of the Exhibition. Joseph O'Connor, San Francisco, General Director.

2d. Report on the Exhibits of the Common School Work. George T. Fairchild, Manhattan, Kansas.

3d. Report on the Exhibit of Work in Drawing. Langdon S. Thompson, Lafayette, Indiana.

4th. Report on the Exhibits of the Industrial Colleges, Evening Drawing Schools, and Normal Art Schools. John M. Ordway, New Orleans, Louisiana.

5th. Report on Manual Training and Technical Exhibits in General. Selim H. Peabody, Champaign, Illinois.

6th. Report on Kindergarten Exhibits. Nora A. Smith, San Francisco, California.

7th. Report on Primary, Grammar and High-School Work in Art. Emily A. Edmunds, South Kensington, London, England.

8th. Report on the Exhibits of the California Schools. J. M. Greenwood, Kansas City, Missouri, also on the same, by H. H. Belfield, Chicago, Illinois.

9th. Report on the Exhibits of the Eastern and Central States. Jean Parker, San Francisco, California.

10th. Report of the Committee of the Department of Art Education on Art Exhibits. Albert H. Munsell, Boston, Chairman.

These titles convey some idea of the character and extent of the Exposition. The three following reports, given in full or in part, relate directly to the topics included in this Appendix and are all for which space can here be given.

(3.) *REPORT ON THE EXHIBIT OF WORK IN DRAWING.*

LANGDON S. THOMPSON, LAFAYETTE, INDIANA.

The duty of making a report upon the exhibit of the Art Department having been assigned to me, I beg leave to make the following record.

In accordance with your suggestion with regard to assistance, I called to my aid in this work the following-named persons: Albert H. Munsell, of Paris; Henry T. Bailey, of Massachusetts; F. J. Richardson, of Minneapolis, Minn.; W. G. Raymond, J. J. McDay, and Mrs. R. F. English, of California.

I found exhibits in drawing and other art-work from the following schools, which seemed to come under the Art Department as assigned to me: Girls' High School, Boys' High School, and Lincoln Evening School, of San Francisco, California; Oakland Public Schools, California; Livermore College, California; Portland Public Schools, Oregon; St. Paul Public Schools, Minnesota; St. Louis Public Schools, Missouri; Hays Public Schools, Kansas; Muskegon Public Schools, Michigan; Chicago Public Schools and Cook County Normal School, Illinois; Clara Conway Institute, Memphis, Tennessee; Swarthmore College, Pennsylvania; Mechanics' Institute, Cornell University, and Woman's Institute of Technical Design, New York; Public Schools and Evening Drawing School, Worcester, Masssachusettts; Medford High School, Free Industrial Evening Drawing School, and State Normal Art School, of Massachusetts.

For the reports of the several exhibits in detail, which occupy three pages of the book, the reader is referred to the official volume of Reports of the Proceedings of the Association for 1888.

PRESENT PHASE OF THE DRAWING QUESTION.

Judging from the exhibit, from conversation with educators, and from the references to drawing in the papers presented before the Association, this subject is securing a foothold in our largest schools. There is a great variety of opinion, however, as to the supreme good to be expected from it, and hence as to the method of teaching it. Many, perhaps the great majority, think that picture-making is the chief end and aim; and as the easiest way to produce a picture is to copy the drawing or painting of another, we find many self-deceived teachers and pupils who suppose if one can copy well he can draw well. Let it be understood once for all, that the drawing which is to effect character in the noblest way, must be a *translation*, not an imitation, of that which is seen, or felt, or desired. In ordinary translation from one language to another, one must thoroughly understand and feel the thought to be expressed, and he must also have facility in the use of the language in which the thought is to be expressed. In the order of time we have first the thought and then its expression, but in fact neither is complete without the other, and they must be synthetically joined in a perfect unity.

Let us, then, so far as we can (we can not do this perfectly until our teachers have had more time to study the subject), treat drawing as a means for the expression of thought—the pupil's thought, not that of some one else—until he can make it his own. Now if this is a true view, it seems to me that the order of procedure is plain. The teacher's business is to lead the pupil to think, and to give him in some way a motive for expressing his thought, either in three dimensions, by means of surfaces, or in two dimensions, by means of lines, light and shade, and color.

We are tempted by the study of this exhibit, and the observations we have made at other times, to make another remark. The recognized leaders of the drawing movement have been studying the subject from fifteen to twenty years, and some of them think they have about solved the question as to the best method of teaching this subject. These leaders have worked themselves up to a high degree of enthusiasm, while the great body of the teachers have been absorbed in teaching the subjects required of them. The leaders are so far in advance and so high in the æsthetical region that their voices are scarcely heard, and they seem to be speaking in an unknown tongue. Let the leaders come near the teachers and put themselves in their places. Many of these teachers are seeking the right way, and they are more than willing to be directed by those who have been over this way before them; but they should be allowed a reasonable time to arrive at the heights now occupied by their leaders.

In other words, the friends of drawing will do well to slightly overlook what ought to be, and take up the subject just where the common teachers are ready to begin.

(7.) *REPORT ON PRIMARY, GRAMMAR, AND HIGH-SCHOOL WORK IN ART.*

EMILY A. EDMUNDS, SOUTH KENSIGTON, LONDON.

This exhibit is generally of the greatest interest to teachers, evincing immense energy and perseverance in the arduous work of training the young, and a careful review of the salient points in the results shown has been a very fascinating occupation to the writer.

Chicago grammar schools send very perfect designs in paper-cutting, in beautiful effects of color, especially where tints representing wood are used; also very good "home work" in wood-carving in flower-forms, objects, and geometric designs This is the best work of the kind in the whole collection.

St. Paul's district schools show excellence in models in sepia, and send fine architectural designs and good machine drawing. The early-grade studies in harmony of color and drawing from objects are of the highest excellence.

From Muskegon, Michigan, come pretty ornamental designs in fifth and sixth grades, and good specimens of drawings produced in two years under a special teacher, also nice artistic needlework in fifth grade.

Worcester schools show fine early-grade work and very beautiful original decorative designs (fifth and sixth grades), and more beautiful specimens of higher excellence in later grades; also fine architectural drawing (pen-and-ink), and very fair shades from models and casts. The studies in water-color are very good, being clear and pure in tone and evincing true perception of harmony in color. The mechanical and architectural drawings of the evening school are thoroughly well executed.

The Portland schools (Oregon) send a good exhibit from the examination papers in pencil-drawing, showing effective third and fourth grade work, and orginal decorative designs of a very rich and florid character; also some good shaded work in models. The collection of botanical specimens is of crowning excellence, and does honor to the talent and industry alike of teacher and pupil. These piles of lovely flowers were the admiration of appreciating visitors to the exhibition, and it will be interesting to others to know the plan of study followed in this enterprising State. Nuttal's Botany is the text-book used. Recitations are given four times a week, and pupils are carefully instructed in the best mode of preparing the dried specimens after they have been collected in the weekly expeditions organized for this purpose.

The public schools of St. Louis send a magnificent display of primary, grammar, and high-school work—work that can only be produced by systematic, carefully-graded instruction of the highest intelligence. And as the entire exhibit is eminently successful and most worthy of emulation, it will be valuable to teachers to state that the books for drawing and models for form-study used by the St. Louis schools can be obtained from the Prang Educational Company, Boston. In all grades the modelling in clay is a prominent feature, commencing from simple fruit and geometric form, and going on to the more complicated pieces of decorative art and designs in foliage. The latter specimens of modelling bear the fresh impress of nature, and all the refinement of delicate detail. A finely-executed profile Dante in high relief was a notable piece of eighth-grade effort. The courses of drawing in construction, representation, and decoration, are more systematically developed than in any of the other schools, and the original designs from nature, and conventional developments of the same, are of the highest order of merit. They lead on successfully to the studies in still-life, and drawings from casts in the high-school grades, which do full justice to the important early-grade training, and prominently justify the award of merit made by the National Educational Association.

REPORT OF THE COMMITTEE OF THE DEPARTMENT OF ART EDUTION ON ART EXHIBITS.

ALBERT H. MUNSELL, BOSTON, CHAIRMAN.

The Committee on Exhibits appointed by the Department of Art Education herewith presents its report.

Since committees on industrial and manual work exist in those departments, this committee has confined itself to such schools as teach drawing as the language of form; judging the completeness and educational character of the course, and the relative excellence as shown by the exhibits.

Appended will be found a tabulated statement of the note by the committee on each and every exhibit, the aim being to encourage even the smallest beginnings. They are classified as public day schools, normal schools, evening schools, academies, and colleges.

Massachusetts sends five exhibits; California, four; New York, Illinois, and Missouri, two each; and Pennsylvania, Michigan, Kansas, Oregon, Minnesota, and Tennessee, one each.

Where the supervision in the high school differs from that of the lower grades, each has received a separate report.

THE PUBLIC SCHOOLS.

Work in the public schools shows a marked advance over previous exhibits. The most logical and complete courses are from St. Louis, Chicago, St. Paul, Oakland, and Worcester. St. Louis excels in clay-work and object-drawing, St. Paul and Worcester in color, and Chicago in elementary design. Oakland shows remarkably good work in the development and construction of paper models. It is to be regretted that the State does not require freehand representation of the appearance of objects in connection with the geometrical work. A beginning has been made in Hays City, Kansas, which must be encouraged and supplemented by some educational system. The San Francisco public schools make excellent exhibits of map-drawing in all grades, and the work of the Broadway Grammar School in drawing directly from the living model, even in the lower grades, is unique. The Boys' High School is especially commendable for its practical methods of studying geometric problems; and the Girls' High School for careful copies from the flat. It is regretted that the object-work in this school is not as fully developed. There is a commendable lack of "copy-work" throughout the entire exhibit of the schools of Portland, Oregon. The map-drawing is good. The exhibit from Muskegon, Michigan, is quite complete, the best work being in copies from the flat. The light and shade work from objects in both this exhibit and the last mentioned is evidently carried on under the disadvantages of poor illumination. The exhibit of the high school of Medford, Massachusetts, shows how well machine-drawing can be executed in pencil.

NORMAL SCHOOLS.

Preëminent among the exhibits of the Art Department stands that of the Massachusetts Normal Art School, both for technical excellence and for the scope and completeness of its course. Beginning with a year of elementary drawing, there are classes in painting, modelling, scientific work, and the figure; while the subject of design, both elementary and applied, runs throughout the course. Students and graduates of this school are employed in so many sections of the country that it may well be called the mother of public school instruction in industrial drawing. For a systematic and logical course, for fullness of exhibit, and for high standard of excellence, it stands unrivaled.

The Cook County exhibit is remarkable for a very unique collection of colored relief maps, and for wood-carving. It also shows a new departure in the application of drawing to other studies.

The exhibit of the St. Louis Normal School is limited in scope, and hardly explains the *normal* character of its teaching.

EVENING SCHOOLS.

The most complete exhibit is that of South Boston, Massachusetts, which shows excellent work in light and shade, and mechanical drawing. It is the only school exhibiting models in connection with ship-drafting. Worcester attempts the study of the living model, and has good architectural work. The Lincoln School, of San Francisco, has practical work in machine and architectural design.

ACADEMIES AND COLLEGES.

The exhibit shown by Swarthmore College is worthy of mention from the fact that it is entirely devoid of the element called "show work"—everything being of a thoroughly practical character. The drawings placed upon the walls show in a clear manner the arrangement of the course, one exercise following the other in the same order that they were given to the classes. The mechanical drawings were made in connection with manual work, which unfortunately is not represented; but all the drawings except the purely scientific have been used in the shop for practical working drawings. In the freehand work the charcoal drawings are undeniably weak in some respects, but the color-work is well worthy of mention. The Mechanics' Institute of Rochester, New York, exhibits commendable work in architectural drawing, light and shade, and color. Cornell University, Ithaca, New York, alone exhibits sketches from nature, and is excellent in geometrical drawing. The Clara Conway Institute, of Memphis, Tennessee, although lacking in educational sequence, shows good color-work. Livermore College, of California, has very good map-drawing.

In many of the exhibits, especially those from Normal Schools and Colleges, there seems to be a lack of system. This is a serious defect. No institution can do educational work without a logical course of instruction.

In connection with the work in light and shade the committee wish to call attention to the poor illumination under which many of the studies have been made. In order that the principles involved be clearly understood by the pupil, there must be but one direction of light. Otherwise cross-shadows, uncertainty of contour, and a lack of solidity will confuse the student.

VII.

TESTIMONY AS TO THE PRACTICAL VALUE OF DRAWING AND CLAY MODELLING IN PRIMARY SCHOOLS.

BY SUPERINTENDENT H. W. COMPTON.

INTRODUCTION.

As, in the City of Toledo, Ohio, one of the most notable experiments in the introduction of Manual Training as a part of the public school system has been successfully inaugurated (for account of the Toledo school see pages 398–439 of this volume); and, as has been before suggested in these pages, there has been apparent a disposition on the part of some of those who were eager to promote the new phases of industrial training, to underestimate the value of elementary training in industrial art drawing, as well as by those who have never been convinced of the value of drawing to the pupils of the common schools, it seems desirable in this Appendix, which is wholly given to a showing of the present status of this study, to quote the comments and conclusions announced by Superintendent Compton, of Toledo, in the latest published annual report of the public schools of that city.*

The Superintendent says: (See pages 49–53, Toledo, 1887, report.)

DRAWING.

Some of the patrons of the schools as well as some of the teachers seem to look with distrust upon the time devoted to drawing.

During the past year eighty minutes per week has been the limit. Yet it is difficult to set a time limit for this work which all may follow. The skill and capacity for rapid work in drawing are much greater in the case of some schools and teachers than in that of others. Some will accomplish the work in fifteen minutes that others require thirty for. So that it is not strange that serious question and criticism should arise as to the time given to this branch, whose utility, under any circumstances, has not been demonstrated to the satisfaction of all.

Indeed it is not an easy matter to convince the "intensely practical," the men and women whose faith in education is based solely upon the three R's, that drawing is an important educational branch. Many continue to say that their boys and girls *must* learn to read and write and cipher in order to transact the commonest business of life. They feel that their children are never to sketch or paint or become art critics and hence they agree that the time devoted to drawing is a sacrifice, and would better be given to what bear directly upon the earning of daily bread.

I believe in a useful education. The great majority of mankind have got to depend upon their daily labor for what ministers to their daily wants. That labor should be made as productive and independent as possible by equipping the mind with useful knowledge and training the hands into practical, industrious habits. Genius is too rare a thing to make it necessary that we should construct our public schools to accommodate it, and it is usually master of itself when it appears. The time is surely coming when the things that men and women *must* do every day to preserve life and make it tolerable and pleasant, will be taught far more extensively in our schools than now. The useless and the ornamental, if they exist in our courses of study, must give place, or at least be supplemented by something better.

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* Annual Report of the Public Schools of the City of Toledo, Ohio, including the Manual Training Department, for the year ending August 31st, 1887. Published by order of the Board of Education, Toledo, Ohio. Montgomery & Vrooman, Printers. 1887. Pp. 132.

WHY THE STUDY OF DRAWING IS SURE TO BE RETAINED.

But in this renovation of the curricula, drawing will maintain its place. This is true, not only because it is indispensable to the mechanical arts but because it is one of the greatest aids to the development of the perceptive power. The clumsy hand must be trained to careful, accurate movement, the unskillful eye must be taught to see, the judgment, the taste must be cultivated and strengthened.

All these things are done by drawing more rapidly and surely than by any other one branch that is taught in our schools.

Superintendent Compton also speaks with approval of a kindred feature of elementary training in Industrial Art, namely, modelling in clay, which, like drawing, is capable of adaptation and use in facilitating other branches of the child's education; as, indeed, each and all the topics and employments taught in the earlier years of child life will, if wisely chosen and properly treated, blend harmoniously in the one great purpose of drawing out and developing the mental and physical powers of the child.

This somewhat novel occupation and training for pupils in the public schools is of quite general application, since it finds place in kindergarten work and in object lessons, while it is well adapted for use in connection with free hand drawing from models; it is also a most efficient aid in illustrating other studies.

This new feature in the educational material of elementary schools is thus commended by the Toledo Superintendent:

CLAY WORK IN THE PRIMARY GRADE.

The modelling in clay of various simple forms which has been introduced recently into the primary grade is looked upon with some distrust and even disfavor in certain quarters. Some well meaning persons who received their early education according to the old methods at one time in vogue, the principal one being the teaching of reading and spelling by the old "alphabet" method, a process which occupied exclusively the first four or five years of school life,—such persons inquire sometimes rather skeptically and with a menace of disapproval in the tone, what this "playing in mud" in the primary schools means?

To those who have kept pace with the educational progress of the age and who know the advantage of mechanical and illustrative work in connection with the study of form, language, and definition, no explanation or defense is necessary. It should, however, be remembered by all that success in primary work does not consis- in keeping the little children shut up in the school-room for a long session, or in compelling them "to study" long lessons assigned. But success in primary work does consist in leading the children to love school, and progress rapidly, by giving a variety of interesting exercises. Those of us who rested for three or four hours at a stretch, in an uncomfortable seat, in a badly warmed, ill ventilated school-room in our first school days, waiting to be called up to recite the alphabet or spell a few words, can well remember how idle and unhappy we were, and can now understand that children, little restless boys and girls with tender minds and bodies, should not be kept shut up long, but should be kept busy with a variety of profitable and interesting exercises while they are in the school.

WHAT IS DONE IN CLAY WORK.

The work in clay furnishes the children a delightful and instructive exercise. In connection with the work in drawing, they mold the sphere and divide it into parts and name them; they make the cube, the cylinder, the cone and other simple forms and learn from observation and the actual handling and drawing of the objects concerning the nature of lines, surfaces, angles and solids. It is an invaluable drill too, in language and numbers and prepares the children in the readiest way for the work in geography and arithmetic which are to follow in the higher grades. Both teachers and pupils take great delight in the exercise.

The only drawback to this work is the labor required in moistening and kneading the clay to put it in proper condition for the class work. The janitors usually do this, but in case they do not the teachers are so impressed with the value of the exercise for the children that they do the work of preparing the clay themselves. This modeling in clay has become an important and successful feature in the school system of many of our best cities and it is to hoped that it may be retained here until its utility is fully demonstrated.

VIII.

DRAWING IN THE COMMON SCHOOLS OF NEW YORK, IN 1888.

The "Monograph" relating to our present subject (Vol. II, No. 5,) issued under the editorship of Dr. Butler, President of the New York College for the training of Teachers, which comes to hand just in time for this acknowledgment, is that for September, 1889. This number of the series, well illustrates the value and the freshness of the topics treated in these excellent publications. It is given to the subject of "Form Study and Drawing" in the common schools, by John H. French, Ph. D., late New York State Director of Drawing in the Teachers Institutes." Want of space prevents quotation, and permits only a brief analysis of contents; with a word of protest concerning an erroneous impression which might otherwise be inferred.

An interesting and touching letter by Hon. Andrew Draper, New York State Superintendent of Public Instruction, introduces the papers prepared by Dr. French, whose death occurred December 23, 1888, largely due, the Superintendent fears, to overwork during the year in enthusiastic devotion to his duties throughout the State.

Superintendent Draper announces, that having come to the conclusion that it was most desirable to add manual training to common school work, as far as possible; and that much use of tools was impossible in elementary schools, he decided "to develop the study of forms, and free-hand and industrial drawing, so far as possible in the public schools."

To effect this, special instruction in the Teachers Institutes throughout the State was given, and this work was wholly in charge of Dr. French, whose success in arousing interest was almost phenomenal. A conference of teachers, in conjunction with Dr. French and Superintendent Draper, to agree on a uniform programme for a four years' course of study, was called at Buffalo, Oct. 17, 1888. The preparation of a "syllabus and general instructions and suggestions in reference to the work" was entrusted to Dr. French. A paper on "Form Study and Drawing as a fundamental branch of study in common schools" was prepared by Dr. French, and read before the State convention of school commissioners and superintendents; in which the educational value of the study, its practical business value, the facility of its introduction in the schools, and an account of his work during the past year, in promoting it, are concisely stated. This paper precedes the programmes of the four years' course, and the syllabus outline for a course of six institute lessons, which with it comprise the contents of the pamphlet. These are very clear, concise and suggestive. They are illustrated with simple diagrams. The "course of study" and "Institute lessons," occupy twenty-five pages, and can hardly fail to be of use to teachers.

In the general statements as to the advance in the ideas in regard to drawing that have taken place during the past twenty years, Dr. French is undoubtedly correct; yet, by the omission of any reference to the movement initiated when Walter Smith was summoned to Boston, by the assertion that, in the early movement, the main argument used for the introduction of drawing was its "industrial value";—(Dr. French himself devotes four out of the eighteen pages of his paper to an argument to show the "practical business value" of the study)—and by the assertion that, "about 1880, in the schools of Boston, Worcester," and other cities, "a decided change in instruction took place. The study of form in models and objects was introduced," etc. The *impression* is conveyed, that "Form Study and drawing" is something *new*—a great advance in teaching; unknown to Walter Smith; undrempt of by Dr. Philbrick and Charles C. Perkins. Well, for "Form Study and drawing," read "Free hand drawing from Models and objects," and you have the exact and distinctive features which characterized the teaching of elementary drawing as introduced in the Massachusetts schools by Walter Smith in 1870. Professor Smith, in his zeal to promote this study of forms, himself designed and had made at the Worcester Co. Free Institute, the admirable sets of Models for Schools, which lie at the basis of the present movement for "Form drawing." Latterly the pupils themselves in many cases make these models in paper after drawing a "working plan," and then draw a picture of them from their paper models. This feature of construction drawing is excellent, the only danger is lest the attention and time of the pupil is absorbed by it to the exclusion of the development of taste and knowledge of beauty; which is so essential to any general knowledge of art, and to any promotion of artistic industries.

The Walter Smith system, after laying the foundation of Industrial Art Drawing in a knowledge of and practice in these geometrical elements of drawing, proceeded to instruct in the elements of Art, the principles of Design, and the ideals of Beauty, by an appeal to the examples of "Historic Ornament."

The present trend of drawing instruction in the public schools is away from Art, and towards Mechanics,—away from the "Ideal" and towards the "Practical," and, unless checked, will utterly fail of developing artistic tastes; and, so, lose the practical results hoped for; that is, the improvement of American manufactures in Art qualities.

The present name of the drawing taught in the schools, "Industrial Drawing," in contrast with the name of the drawing Walter Smith introduced, "Industrial Art Drawing," shows how absolutely the Art idea has been dropped. Nevertheless, the teaching of the elements of industrial drawing, of construction drawing, which seems from this report to have recently received great impulse in the State of New York, is, in itself, most desirable; for, with the habit of studying forms, the use of the hand in clay, and paper work, and with the pencil, once gained, it will be easier to awaken the conception of the Art idea, than if the little fingers and the bright eyes of the children had had no special training.

"Industrial Drawing" and its companions are good and by no means to be abandoned or discouraged, but it still remains, that "Industrial Art Drawing" by its comprehensiveness and its higher ideals, is of grander promise.

Out of the din of present controversy, after the momentary excitement over "practical" education, which now possesses many people who have never given more than a passing thought to the underlying principles of education, and who have evidently forgotten that saying of "Him, who spake as never man spake"—"Is not the life more than meat, and the body than raiment"? has ceased; the higher needs of man's nature will reassert themselves, and the Immortal Ideals of Truth, and Beauty, resume their inviolable thrones.

IX.

HISTORIC ORNAMENT—WHY DRAWING TEACHERS SHOULD TEACH HISTORIC ORNAMENT.

By Wm. T. Harris, LL.D.*

INTRODUCTION.

The following recent paper by Professor Harris, on the proper province of the Industrial Art Drawing Teacher, comes to hand just in season to fitly close the final Appendix of this volume.

This concise paper, which treats of the higher purposes of training in drawing, is full of suggestiveness as to the reasons why the standards and ideals of High Art must needs illumine and inspire the workers in materials,—the industrial artists; if they are to hope for any adequate success as a reward for their labors. The universal appreciation of Beauty which underlies the consensus of civilized mankind in the worship of Greek Art, and in admiration for the marvellous blending of colors in the tissues and stuffs woven in the looms of the Orient, indicates an unfailing desire; an unquenchable thirst! Ideal Beauty, Ideal Excellence,—the "*ϰαλον ϰ'αγαθον*" of the Greeks,—these are the goals toward which all true artists turn; to attain which their successive generations strive. Just in so far as these are approached, the Arts flourish!

"Freedom" and "Harmony."—By the utterance of these two words Dr. Harris unveils the secret of the undying charm which breathes in every great work of Art. These are the twin born thoughts underlying the appellation given to the world's greatest artists; for, in any art, the transcendent Genius whose power all recognize, is spontaneously hailed as "The Master;" and a Master knows no superior! He is free of the domain!

Freedom and Knowledge, these at once give harmony; for the intelligent exercise of power, unhampered and untrammelled,—which is the essence of freedom—cannot fail of harmony.

The words of Dr. Harris concerning the use, as ornament, of geometric patterns arranged in mere repetition and with the sole purpose of producing symmetry, are well worth heeding. The scientists, evolutionists and anthropologists, are so carried away with their loudly asserted success in tracing through the dense obscurity of pre-historic ages the puzzling steps of man's progression; solving, as they claim, the riddles of the Race; that some of them are, already, advancing new theories of Art, and begin to claim that all Art has arisen from the rude basket work of savages—braiding the reeds of the river or the grasses of the plain, and staining them with the juice of berries, or dyeing them with colors extracted from the roots of the forest.

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* From Journal of Education, Boston and Chicago, June 27, 1889.

However that may be, it is not with the *origin* of Art, but with its highest perfection, that we have to deal; and our makers of things for the markets of the world must be able to hold their own against patient workers, sprung from generations of art lovers, and themselves trained in the noblest methods, and familiar with the world's grandest triumphs of art; with races of hereditary artists breathing an atmosphere of art, and unconsciously incited by their environment, as well as by inborn impulse, to continuous creative production. It follows, then, that he who would most "practically" benefit the workers of America, who would most largely increase the prosperity of her manufactures, is he who will most surely and speedily develop and train the art instincts and art knowledge of the American people.

Dr. Harris, it will be seen, finds the best promise of effecting such a desirable result in the development of the æsthetic feature of drawing as taught in our public schools by the teachers of Industrial Art Drawing. He says:

The cause of industrial drawing is in the ascendant, and as the one general branch of industrial training it may justly claim its prominent place. In American arts and manufactures there is abundant ingenuity and technical skill. It is the lack of æsthetic taste which prevents American manufactures from making their way abroad in competition with the rival commodities of France and Great Britain. The old maxim, "*De gustibus non est disputandum*," is not true as an ethical mandate nor as a dictate of practical common sense.

GREEK ART A PERMANENT STANDARD OF THE BEAUTIFUL.

Works of art and ornament that shall command the markets of the world must pay their respects to the standard of the beautiful set up by the Greeks. Other standards may win a temporary vogue in this or that province, but they will not hold their own in different epochs nor in many provinces of the world-market at any one time. The reason for this has been often demonstrated in works on the philosophy of art. The Greek nationality alone among all historic people made a religion of the beautiful, and their definition of the beautiful may be expressed in our language as the representation of freedom in material forms. Inanimate matter is caused to assume the form of living body; it is made to conform to some inner purpose or design, as though a soul dwelt in it and used this body of matter for the expression of its designs and the attainment of its purposes.

REPETITION AND SYMMETRY THE LOWEST QUALITY OF BEAUTY.

The appearance of mathematical regularity and symmetry is the lowest order of the beautiful, a beauty that soon becomes tiresome to the spectator. In the teaching of drawing throughout the country there is evidently too much stress laid upon the two lower steps in art,—the production of regularity and symmetry. It should pass through these steps only on the way to the third step,—the expression of harmony.

"HARMONY" EXPRESSES THE SPIRIT OF GREEK ART.

Harmony alone, as something above the laws of regularity and symmetry, is the step that expresses the Greek standard. It alone expresses freedom. Harmony uses regularity and symmetry, and subordinates them to the expression of purpose and design. It makes a unity of its ornament by making all its parts show an adaptation to the purpose of the soul within the work of art. For the artist endows matter with a soul. Just as the poet personifies and animates nature, so the artist personifies wood and mineral substances, and makes them take on the semblance of life and free movement undertaken for the accomplishment of purposes. Around a vessel made of potter's clay, or wood, or metal, there coils a vine, choosing its path upwards toward the light, but stopping at intervals more or less capricious to expand into symmetrical leaves, blossoms, and fruit.

Around a vase are represented groups of joyful youth in action or in repose,—a glimpse of the eternal spring time of life. The vase itself in its contours spurns the simple geometric forms of the cube, the cylinder, or the globe, and soars away from these as though moved by a vital impulse from within to produce the oval or primitive life-form,—the curve that continually breaks away from abstract conformity to law or constant measure such as is found in geometric shapes like the circle or ellipse. Not content with this in the form of repose it adds oval to oval antithetically. It plays with lower forms in order to express its perfect freedom and spontaneity. It moves outward on an oval, and then inward again as though it proposed to close its curve and complete its egg-form, but changing its purpose it expands again in a reversed oval. It then stops suddenly and girds itself as though with some external cincture. But it only plays with this symbol of outward constraint (the band or girdle), and hastens to manifest its freedom by escaping from its bonds and returning to its own chosen symbol, the oval. Thus a work of art,—even a vase, a mere vessel of capacity,—expresses freedom.

The human race, in all its stages and conditions, loves freedom and the expression of it. But the civilized races far surpass the savages in their appreciation of the highest order of the beautiful. The savage does not get much beyond a taste for what is regular, like a fringe, or string of beads in geometrical shapes. The next stage of culture gets so far as to admire symmetry. Not finding the human body entirely symmetrical he thinks to increase its beauty by tattooing symmetrical figures on it. In his images of his gods he makes them symmetrical by adding a face to the back side of the head and placing another pair of arms to the back, etc., so as to correct the one-sidedness of the human body which seems to him so lacking in beauty because it does not conform to symmetry.

With the insight into harmony the nude human body becomes beautiful, just as the Greeks modeled it; *i. e.*, the appreciation of its true beauty, as found in gracefulness, has begun. The statue must express action, or the intention to act. Even the seated figures of Pheidias have all their limbs under control and are apparently just on the point of action. Every limb is thus subordinated to an internal purpose, and this produces what is beautiful. Even the lack of symmetry in the human form aids and assists the expression of harmony, which is the adaptation of the visible form to express and execute an ideal or motive,—a spiritual purpose.

THE PURPOSE OF INDUSTRIAL ART.

Industrial art sets out with the laudable purpose to educate its pupils so that they may make our manufactures more salable by tasteful ornament. It is evident that more must be done in the direction of educating the ideals of taste, and perhaps less of mere hand-practice. The pupils must not be kept on lessons in regularity and symmetry as though any high order of the beautiful could be achieved in these. We shall never command the markets of the world by adding such a rudimentary style of ornament to our goods. The soul of civilized man loathes mere repetition or mere symmetry. Only the Chinese taste can endure the monotonous music of a tin pan through a whole day. The cultivated races love to see gracefulness of shape in their materials for food, clothing, and shelter, and in all their implements.

THE SECRET AND SIGNIFICANCE OF THE BEAUTIFUL.

Gracefulness is that appearance of freedom which we have already discussed. The soul in its depths feels its freedom and loves to see this heaven-born attribute revealed in external shapes and forms. This is the significance of the beautiful. Things must seem to be *for themselves*, and not merely useful *for others*. We do not like to see vulgar use stamped on objects, even on the most useful of objects; but we must feed our eyes with the appearance of self-activity and freedom, as a sort of reminder of our own ideals, suggesting that we are immortal souls, and not the slaves of our bodies, selling our heavenly birthright for a mess of pottage and toiling in thraldom for mere food, clothing, and shelter.

A MISTAKE MADE BY SOME "EDUCATIONAL REFORMERS."

These reasons for the beautiful seem very transcendental and impractical to our average educational reformers. They think that children "should be taught to earn their living by acquiring skill in carpenter work and blacksmithing." Their mistake seems at first ludicrous. But it is more than this; it is serious. "Production," said one of our most astute economists, Mr. David A. Wells, in 1884, "was never so great in this nation in relation to population as it has been in this last year of depression and want. The East is glutted with goods and wares; the West with corn and meat; the Middle States are burdened with coal and iron; the South with cotton and grain, and each section has all that the world needs."

PROOFS THAT AMERICAN PRODUCERS NEED ART INSTRUCTION.

We are producing too much raw material and manufacturing too much common goods of a coarser quality. If we could put more taste into our manufactures, employ fewer people in raising the raw materials, and fewer in making coarse goods, and more in producing a finer quality of ornament, the balance would be restored. As it is, only one twelfth of our laboring population are engaged in the wood-working trades. In the twenty-five trades that belong to wood-working, and in the twenty-two trades that belong to metal work, there were, in 1880, 1,349,307 laborers. These provide more goods than we can sell at home and abroad. We cannot get and hold foreign markets unless we put a more refined, æsthetic taste into our ornament.

AN IMPORTANT ILLUSTRATION OF THE VALUE OF ART INDUSTRIES FURNISHED BY SWEDEN.

This is the practical question. We have heard much of the Swedish education in wood-work. But when we have seen specimens of the productions of Swedish schools, the impractical character of that education has become obvious. The Swedish youth need precisely what our youth need and what the youth of France and Belgium actually receive; namely, education in real industrial art. Such wood-work as the Swedes make cannot command the market of the world like the productions of France and Belgium. In our great commercial year, 1881 (see Report of Treasury Department, Foreign Commerce, 1881), we imported from Sweden only $173 worth of wooden manufactures, counting cabinet wares, house furniture, and various other manufactures of wood. But we imported nearly a thousand times as much of this commodity from Belgium. As an amazing fact in contrast to this, in that same year we imported from Sweden and Norway nearly $40,000 worth of rags! In that year, too, we supplied our home market for wooden manufactures, except an importation amounting to a million and a half, and exported $18,600,312 worth. We imported also from Sweden $744,020 worth of iron in the shape of bar iron, pig iron, and old scrap iron, buying it merely as raw material. But we purchased less than one sixth that amount of manufactured iron and steel in that year from Sweden and Norway, not finding their æsthetic taste in manufactures to our liking. These are facts to be pondered by those among our people who pride themselves on having discovered the word 'practical' as something opposed to the ideals of the soul.

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